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HANDBOOK

TO

VICTORIA

(AUSTRALIA)

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A SHORT DESCRIPTION OF THE COLONY,

ITS PRODUCTIONS, MANUFACTURES, & CAPABILITIES,
ESPECIALLY WITH REGARD TO ITS NEW
AGRICULTURAL INDUSTRIES AND
SETTLEMENT ON THE LAND.

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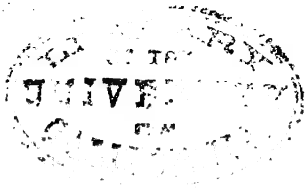

VICTORIA.

CHAPTER I.

PHYSICAL GEOGRAPHY.

THE Colony of Victoria, formerly known as Port Phillip, is the smallest but most populous and important of the colonial divisions of the Continent of Australia, occupies its south-east corner, and lies between the 34th and 39th parallels of south latitude, and the 141st and 150th meridian of east longitude. The shores of Port Phillip Bay, which is the chief harbour of the colony, were first explored by Lieutenant John Murray, who entered its Heads, and named the hill known as Arthur's Seat, ten weeks before Flinders visited it in 1802. Later in the same year Charles Grimes, surveyor of the parent colony (New South Wales), visited the shores of Port Phillip, and finding a river running into the Bay, which the natives called "Yarra-Yarra" (meaning "flowing-flowing"), sailed up it a little beyond the place on which the metropolis (Melbourne) now stands; but it was not until January, 1877, that his original map was found in the survey office at Sydney, and that the credit of being the "father of the colony" was accorded to him over the claims of Batman and Fawkner to that honour.

Victoria is bounded on the north and north-east by New South Wales, on the west by South Australia, and on the south by the Southern Ocean and Bass's Straits, the latter of which separate it from the insular colony of Tasmania. Its extreme length from east to west is about 420 geographical miles, and its average width from north to south about 240 miles, the coast line extending about 600 miles. Its area is 88,198 square miles, or 56,446,720 acres, or

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about a thirty-fourth part of that of the entire continent, and is less by 1466 square miles than that of Great Britain.

Notwithstanding the fact of its being far smaller than any of the sister colonies on the mainland, its population, which was estimated in June, 1877, at 460,907 males, 388,114 females, total 849,021, is equal to about three-fourths of all the others put together. The southernmost point of land in Victoria is a rocky headland known as Wilson's Promontory, which is also the southernmost point of Australia, and it is on this account that the colony is by English and other writers not acquainted with Australian nomenclature, sometimes erroneously called South Australia, the fact being that South Australia lies very much further north than does Victoria.

Physically the colony is divided into two parts, north and south, by a range of mountains known as the main or dividing range, which runs from east to west nearly its whole length, and at an average distance of about sixty or seventy miles from the sea. The eastern part of this range is known as the Australian Alps, and the western part as the Pyrenees. This forms the main watershed of the country, the rivers rising in it flowing generally north or south as the case may be, the former into the Murray River, which runs along the northern boundary, the latter into the sea. From the main range run numerous spurs, the loftiest being the Bogong Range in the eastern part, whose summit reaches an altitude of 6508 feet above the level of the sea, being the highest point of land in the colony. With the exception of the Murray, which is the largest in Australia, the Yarra, the Goulburn, and one or two of the south-eastern or Gippsland streams, the rivers are unnavigable, except by boats. There are numerous lakes in the colony, some salt, some fresh. Of these Korangamite (salt), has an area of seventy-six square miles, and lakes Hindmarsh, fifty-six square miles, Colac, ten square miles, and Burrumbeet, eight and a half square miles, all fresh, are the largest. There are also large lakes in Gippsland, but they are more in the nature of lagoons, being separated from the sea only by a narrow strip of sand. Port Phillip is the largest inlet from the sea into Victoria, being a sheet of water thirty miles long, and thirty-five miles wide. It is entered by a rather narrow

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passage, and has numerous shallows and sandbanks, the channel between which is, however, well buoyed.

The head of Port Phillip is known as Hobson's Bay, and it is there that most of the large foreign shipping for the port of Melbourne anchors. A considerable portion of the intercolonial shipping, however, steam and sailing, proceeds up the Yarra River, which falls into Port Phillip, and berths alongside the wharves in the city of Melbourne itself. Further down Port Phillip, on the western side and nearer the entrance from the sea, is Corio Bay, on which is situated the town of Geelong.

The geological formation of Victoria has been thoroughly and carefully investigated, the prevailing rocks being found to be granite, syenite, quartz, mica, schists, sandstone, clay, slate, and ironstone.

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CHAPTER II.

CLIMATE.

THE geographical position of Victoria, which is between the 34th and 39th parallel of south latitude, and the 141st and 150th meridian of east longitude, gives it the mildest and most equable climate of any of the Australian colonies. It is warmer in summer than Tasmania, and colder in winter than New South Wales, Queensland, or South Australia, but does not suffer from the cold, foggy winter weather of the first, nor the intense summer heat and scorching winds of the other three.

It is true that there are occasional hot winds which blow from the north, and which, bringing with them clouds of dust, parch up vegetation, shrivel the fruit on the trees, and create a feeling of extreme lassitude in both human beings and animals. But much as these hot winds are dreaded by new-comers, they are by no means so frequent and certainly by no means so severe as is generally supposed. The average of hot wind days for the colony amounts, according to Professor Neumayer, to about 8·4 in the year, but of these it must be remembered the major portion are rather warm, than hot, wind days. Even at their worst, they rarely last longer than a day (three days is the maximum duration), when in the evening a strong south wind, with thunder, lightning and rain sets in, and rapidly clears the oppressive atmosphere.

These hot winds produce temporary inconvenience to young children and invalids, yet they are not dangerous. They destroy organic germs, whether of animal or vegetable origin, which are generally admitted to be the sources of epidemic diseases. They are therefore healthy in character.

A popular error with regard to the climate of Victoria is that it is a land of long and severe droughts, during which the soil is burnt up

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for months, vegetation ceases, and the country is decimated of cattle and sheep for want of water. Nothing was ever further from the truth. It is not denied that there have been and are occasional seasons of drought, but these, like the hot winds, are greatly overrated, and are not nearly so frequent, so severe, or so disastrous as has been stated. The truth is that Victoria, while not having so great a rainfall as that portion of New South Wales which lies between the coast range and the sea, has a greater one than South Australia, as is shown by the valuable work of Sir G. S. Kingston, in which the number of inches of rain for the year in Sydney, Melbourne, and Adelaide are stated at 49.95 in., 27.58 in., and 21.36 in. respectively. The mean of the rainfall in Melbourne for fourteen years during the various seasons is set down as follows:—Spring 40·3 days, summer 24·4 days, autumn 28·9 days, winter 41·9 days, a total average of 135·5 days. In Sandhurst, as representing the northern part of the colony, the number of wet days averaged 164·82, and in Portland, as representing the south-western portion, 108·08 days. The year of greatest rainfall was 1849, when 44·25 in. of rain fell, and that of least 1845, when it was only 15·94 in.—both these years may, however, be looked on as exceptional ones. The balance of the year, omitting occasional unpleasantly hot days, may be characterised as consisting of fine, clear, genial weather. The mean temperature of the air at Melbourne is shown, as based on observations extending over fourteen years, as in spring 57°·0, summer 65°·3, autumn 58°·7, winter 49°·2. In summer 80° in the shade may be looked upon as extreme heat, and yet such is the purity and elasticity of the air, that even with this exceptional temperature, little or no inconvenience is felt. The hottest day on record during the last eighteen years, was the 14th January, 1872, when the thermometer in the shade showed 111°·2; it has risen to or above 100° sixty-one times during the same period. During the same eighteen years the thermometer has fallen to or below the freezing point fifty-two times, the extreme cold being in 1865, when 30° were registered. All this goes a long way to prove the assertion that has been made over and over again, both by colonists and visitors who have travelled much, that the climate of Victoria is one of the finest in the world.

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As compared with other places, Melbourne, the capital of the colony, has a climate corresponding with that of Maffra, a small township eighteen miles N.W. of Lisbon, situated in 38° 55′ N. lat. and 700 feet above sea level. The chart shows the isothermal line on which Melbourne is situated to correspond to that on which, in the northern hemisphere, are placed Marseilles, Bordeaux, Bologna, Nice, Verona, and Madrid, the climate of Melbourne, however, having the advantage of being more equable than that of any of those places.

The Victorian spring commences on the 23rd of September, the weather throughout being generally mild, pleasant, moderately warm and having about the average rainfall. Summer commences on the 22nd of December, the longest day, and usually opens with changeable weather, occasional high winds, and heavy rain. December is the wettest, and January the hottest summer month, although hot winds are frequently experienced in February. Autumn begins on the 20th of March, when, alternating with refreshing showers, occurs the pleasantest time of the year. The summer heats have passed, and the soft airs from the north and north-west temper the atmosphere to a delicious mildness. Winter commences on the 21st of June, the shortest day, and brings with it stormy and boisterous, but not very wet weather, although there are occasional heavy falls of rain.

With regard to the climate, in reference to the growth of vegetable products, it may be said that Victoria, within its comparatively limited area, will grow and bring to perfection the products of three of the seven vegetable zones into which each hemisphere is divided. Speaking generally, it assimilates to Southern Europe, and especially to that part of it bordering on the western part of the Mediterranean Sea, for although the latitude of Victoria is several degrees higher than that of the countries indicated, still, the fact that a lower mean temperature, varying from 4° to 7°, and even to 10°, prevails in the southern over the northern hemisphere in corresponding latitudes outside the equator, fully accounts for the difference. This difference is caused mainly by the greater area of ocean surface.

But it is necessary to seek further for a reason why within an extent of barely 240 miles, or something over 3° of latitude, there

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should be as great a range of climate as exists within a range of from 10° to 11° in the most favoured parts of Europe. This reason is to be found in the fact that there are certain local causes constantly at work, which on the one hand correct the true southern hemisphere tendency to lowered temperature in one part of the colony, and on the other retain it in its normal state in another.

These causes are due to the influence of the low coast mountain range which divides the country into two nearly equal parts, north and south. In his treatise on the subject published in the "Official Record of the Melbourne Exhibition, 1872," Mr. O'Hea, M.L.A., thus accurately traces the operation of these causes:—"The rise of the land upwards from the sea is so gradual as to be scarcely perceptible, yet it is sufficiently marked to cause the entire coast region to present a decided slope facing the great Southern Ocean, and directly exposed to the cooling influence of the winds that blow from the water upon the land. This gives, for the latitude, a comparatively cool summer climate to the coast region, though the value of the mean temperature reading of the season is generally made to appear high by reason of the periodically recurring hot winds of December, January, and February, from the north. The coast district is thus, on the whole, exceedingly mild in its climate. On the other hand the country inland, from the summit level of the Dividing Range to the Murray, descends with an equally gradual but decisive slope facing the north—an aspect which secures to it an enhanced degree of solar heat, which heightens the mean temperature in the north of the colony to the same extent as the opposite conditions lower it in the south. The periodical hot winds have also their distinctive effect in this direction, and the greater or less prevalence of very decided drought throughout the year lends its aid to give to the northern division of Victoria a mean summer temperature of comparatively high value."

Thus the coast range, shutting in that corner of Victoria known as Gippsland, and producing there a moist climate, turns off to the westward, and practically divides the colony into a northern and a southern half. In the southern is the wheat-growing, and, owing to its mildness, the grape-producing region. It is in the northern

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half of the colony that is found the temperature representing the zone of the olive, fig, and orange.

Will these products, with all these advantages of climate, grow in Victoria, can they be brought to perfection, and if so, can they be practically utilised? Unquestionably; and it needs only energy, enterprise, patience, and knowledge of the subject to grow all the vegetable products of the temperate parts of Southern Europe in profusion. Already there is the corn and the wine, soon, let it be hoped, there will be the oil. Cereals and root crops, fruits, from the hardy apple to the luscious peach, grow in abundance. The wines of Victoria are known and appreciated even in the wine countries of Europe, and that too "in mouths of wisest censure." Much has been done, more "remains behind." It has been shown, proved to demonstration, that the colony will produce the olive, the orange, the fig, the mulberry, the almond, the raisin and currant grape, &c., &c., and skill and capital are now only waiting to produce in Victoria the crops of the most favoured countries of Southern Europe.

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CHAPTER III.

SOIL AND AGRICULTURE, LAND-LAWS, ETC.

Up to quite recently an idea prevailed, even amongst the better informed in England, and on the Continent of Europe, that the interior of Australia was a vast wilderness, an arid waterless desert of sand and stones, where nothing grew or could grow, and where it was impossible for human or animal life to exist; notwithstanding that so many works have been written on Australia stating the total falsity of such an idea, yet it cannot be denied that in the minds of nine-tenths of those who ever think about the colony at all, that impression still remains. This erroneous idea is now so widely spread as to deter many of those who might and would become good an successful colonists from trusting their future in a land concerning which they are so lamentably misinformed.

Much of this misconception as to the character of the interior has been caused by the reports of ignorant writers, many of whom having probably never left Melbourne, have come to a conclusion on mere hearsay evidence.

But few persons take the trouble to wade through the voluminous mass of statistical information issued yearly by the Government, although those who do not would probably be surprised at the extent of land under cultivation, and the amount and value of the crops produced. Nor is the land so under cultivation restricted to any one district. On the contrary, blocks of land are opened up, and are continually being opened up for agricultural settlement in all parts of the colony, and the great work of placing an industrious population on the soil is rapidly and steadily going on.

It is not contended, of course, that all the land in the colony possesses soil of equal richness, or of similar quality, and there are large areas of country unsuitable, either from position, or from the nature

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of the ground, for the cultivation of wheat or potatoes, or even for dairy purposes, but admirably for other valuable industries common in Southern Europe. And it must be remembered that the present race of colonists in Victoria devote almost all their energies to growing the cereals or root-crops of Great Britain, or to the production of milk, butter, cheese, and other dairy produce. For these purposes special qualities of soil and situation are required, and hitherto, all country unsuited to them has been practically ignored, or if utilised, only so in a perfunctory and experimental manner. An Englishman must have land that will carry grass. He is accustomed to green fields and deep meadow land, and ignores the dry volcanic soil that produces the semi-tropical fruits of Southern Europe, the home of the vine, the mulberry, and the olive.

So it is that there are millions of acres of land, the finest and ttest in the world for the growth of those valuable products, lying untenanted in the immediate neighbourhood, or within easy distance of large centres of population. As has been shown in a previous chapter, the climate is suitable for these products, and experiments have satisfactorily proved that the soil is of the proper character and quality. It now remains only for intelligence and energy to carry out the enterprise to its full fruition, and to cover the sunny slopes, spreading plains, and sheltered valleys of northern Victoria, with a race of hardy vignerons, olive dressers, and sericulturists.

In dealing with the question of agriculture, it is proposed, first of all, to treat on the extraordinary facilities offered by the Government of Victoria for taking up land in freehold. These facilities are not the growth of a day. In former years the colony was, except in a few cases, a territory composed of vast holdings, utilised mainly for sheepwalks, and so held by the squatters, as these large stockowners are called, as to preclude ownership, or even occupation, by small farmers. As time progressed, and the desire of colonists to settle on the land increased, it became the policy of the Government to throw open the land for general occupation.

After a considerable amount of tentative legislation the first successful measure was the Land Act of 1869. Previous to its passage the Hon. J. M. Grant had by his administration of the Land Act of 1865, and

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especially by his interpretation of the powers entrusted to him under the 42nd clause, done much to settle the people upon the lands, but the area which they could occupy was too small, the terms too high, and the tenure insecure. The Land Act of 1869, introduced by Mr. Grant and the Hon. J. J. Casey, President of the Paris Commission, and subsequently administered by the latter, introduced free selection before survey, continued the fixed price at £1 per acre, to be paid by ten instalments of 2s. each, reduced the area capable of being selected to 320 acres, insisted upon personal residence after the first six months for two years and a half, cultivation of one tenth during the first three years, enclosing with a fence, and effecting improvements to the value of £1 per acre. The choice of selection was thrown on the Department of Lands, as also the power to determine whether the conditions had or had not been complied with. This act is now in force, and it is to it that the rise and extension of agriculture in Victoria may be fairly said to be due, as under its liberal provisions vast tracts of territory comparatively waste until then have been taken up, notably in the districts of the Goulburn Valley, the Wimmera, Avoca, Campaspe, Terricks, Thunder, Loddon, and Ovens Plains, Gippsland, and the Upper Yarra.

Any man can hold land, and can become the proprietor thereof by paying for it at the rate of 2s. per acre for ten years; nor does a foreigner need to become naturalised in order to enjoy the privilege. Shortly, the provisions are as follows:—

1. Any person has the right of free selection of any land in the colony which may not have been sold or disposed of, under certain conditions.

2. He may apply personally to the land officer for the district in which he wishes to select for a licence to occupy an area of Crown lands not exceeding 320 acres in extent.

3. The term for which the application must be made must be three years, the occupation fee or rent being at the rate of 2s. per acre, paid half-yearly in advance.

4. The license is not transferable, nor has the licensee power to sublet.

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5. The licensee must fence the land within two years, must reside upon it, and during the three years' term of his license must cultivate at least one out of every ten acres, and must make a total of improvements to the value of £1 per acre of the allotment, the value of the fencing being included in the improvements.

6. Within thirty days of the termination of his three years' license, and having fulfilled the conditions of occupancy, the licensee may, on payment of 14s. per acre, obtain a Crown grant in fee simple of his land, or should he not be in a position to pay the 14s. per acre, he may obtain a lease of his allotment for seven years, at a rental of 2s. per acre per annum.

7. At the expiration of the seven years' lease (ten years in all), and having fulfilled the conditions, he will have paid £1 per acre for his land, namely, 2s. per annum for ten years—seven years of lease and three of previous license—and will then be entitled to a Crown grant in fee simple of his allotment without any further payment.

8. The lessee may at any time during the currency of his lease purchase the freehold by paying in advance the balance between what he has already paid, and the total sum of £1 per acre.

This easy method of becoming proprietors of the land they settled on has been productive of a wonderful change in the *materiel* of the colonists of Victoria. Thus, in 1861, there were 17,343 farmers, farmers' wives, market gardeners, &c., and 23,875 farm labourers, farm servants, and garden labourers, a total of 41,218 persons; while in March, 1876, there were no fewer than 88,719 persons employed on the 40,872 farms and agricultural holdings of the colony, being 61,273 males and 27,446 females.

The facilities offered to the middle classes and agricultural labourers for the acquisition of homesteads have produced this remarkable change, since the opportunities of becoming their own masters have induced thousands of industrious men, who could save enough of their wages to build a hut, fence in a piece of land, and provide food for their families until they could get in their first crops, to settle on the land. There has thus arisen a large body of small farmers, who, while improving their own positions, have also

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materially added to the wealth and substantial good and advancement of the colony. Many other industrious men too, not having more money than was necessary to pay the first half-year's rent, and to build a hut for their families, have boldly ventured on settlement on their own account, trusting to the work they could obtain during the three or four busy months of shearing and harvest time for funds to supply their needs, and to fence and crop their own holdings.

The *modus operandi* for obtaining an allotment under the Amending Land Act of 1869 is at once simple and expeditious. The applicant selects a suitable piece of ground, and having pegged it out, that is to say, placed a wooden peg not less than three feet above the ground at each of the four corners of his selection, on one of which pegs he has placed a notice of his intention to apply to the Crown Lands Office for the land so marked out, gives notice to the Government Surveyor for the district, and advertises in the local paper the fact of his application. The land is thereupon surveyed and reported on, opportunities being afforded to other parties to object to the land applied for being granted. Such objections are very rarely raised, and only for cogent reasons will be entertained. The application being recommended by the district land officer, and approved by the Board of Land and Works, the license for occupation is issued forthwith.

Thus then, by an easy process, any man in Victoria, alien or otherwise, can by the payment of two shillings per acre per annum for ten years, and by complying with the simple conditions of fencing, cultivating, and improving his land, become the possessor of a farm of from 40 to 320 acres in extent, at the nominal price of £1 per acre, the greater portion of such price having already been paid by way of rent.

Nor is pastoral occupation allowed to impede agricultural settlement, for except on portions of Crown Lands reserved for public purposes, the selector may choose out his allotment wherever he thinks fit, and may have it surveyed at once. The regulations are so simple that they are easily complied with, much of the difficulty with the squatters has been overcome, and the *bona fide* settler may now obtain his land almost immediately after having marked it out.

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With regard to the land itself, the entire area of Victoria is 56,446,720 acres, of which about 13,855,003 acres have been already alienated, either sold or taken up by selectors, leaving about 42,591,717 acres still the property of the Crown. Of this, however, over 20,000,000 are not immediately available, as they consist of mountain ranges, swamps, and mallee and tea-tree scrub, &c., and require reclamation and improvement. Even of this, however, very much, by the judicious outlay of capital, may, and no doubt will, in future years, be rendered valuable, both for agricultural and for special purposes. Of the remaining land, twenty-two and a half million acres, or thereabouts, which is now ready and open for settlement, it may be said that it is generally suitable for agricultural purposes. The very fertile, rich, black, and chocolate soils of volcanic origin cover an area of nearly 8,000,000 acres, and there are about 23,000,000 acres of rich light loam, alluvium, and good clay. Much of the forest land, although of excellent quality, is yet unoccupied, some being covered with heavy timber, some with scrub, but the labour of clearing this, especially the latter, is not nearly so great as has been generally supposed. The character of the soil in any ocality depends, of course, on the geological formation of the district. According to the latest information the various descriptions of soil may be thus classified. Of rich, light, loamy soil, to be found on terraced flats along river valleys, and in narrow belts along the sea coast, also in extensive level plains with stunted timber and thinly-grassed undulating country, there are about 23,000,000 acres. The flats referred to are open or lightly-timbered with redgum, blackwood, &c., and their geological features are clay, sand, lime, gravel, tertiary, and superficial deposits, including alluvial soil. Of cold sandy clays and poor light sandy loams found in hilly and undulating country, timbered with iron and stringy bark, and having a geological formation of clay, slates, schists, and sandstone, about 18,000,000 acres. Of rich black and chocolate soil, noted for its fertility, and met with in open slightly undulating plains, with isolated wooded, sometimes stony hills, belonging to the tertiary period, and volcanic in origin, about 8,000,000 acres. Of light and sandy soils in undulating and hilly country, with open

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timber and good grass, about 5,000,000 acres. These soils are also found on mountain ranges, densely timbered, extending to 6000 feet above sea-level, and belonging to the granite formation. Of rich sandy loams, in open well-grassed downs and hilly country, with dense forests, and showing geologically *shales* and soft sandstones, about 2,000,000 acres. Of all these descriptions of soil, for agricultural purposes the alluvial and black vegetable moulds rank first. They yield very large returns to the farmers, and are situated in Gippsland, Western Port, round Colac, and all over the Warrnambool district. Next to these are the volcanic soils, black or chocolate. Some very rich farms are found on these, and they are admirably suited to the growth of the vine, the olive, the fig, the mulberry, and other fruits. The poorer loams follow these in order of value, being fertile, and yielding good crops. The granite soils, fair, but light and sandy, come next; and lastly, clays and adhesive loams, and soils in which sand is a large constituent, although some of the latter are valuable for special products.

Wheat, oats, barley, potatoes, and hay, are, and always have been, the standard crops of Victoria, and beyond these no great extent of any one thing has yet been grown. Maize is largely used for horse feed, but it is principally imported from New South Wales, where it grows freely. But the small variety, or ninety-days maize, will ripen anywhere, and it needs only to be better known to cause it to be cultivated in Victoria. It yields abundantly, with little trouble, and is good at all stages of its growth for one or other kind of stock.

With regard to the standard crops, the latest statistics show that for the year ending 31st March, 1876, there were under wheat, 321,401 acres; oats, 124,100 acres; barley, 31,568 acres; potatoes, 36,901 acres; hay, 155,274 acres; and green forage, including cereal grasses (barley, wheat, oats, &c.), maize, rye grass, lucerne, clover, vetches, &c., sorghum, and permanent artificial grasses, 308,405 acres; the returns being wheat, 4,978,914 bushels; oats, 2,719,795 bushels; barley, 700,665 bushels; potatoes, 124,377 tons; and hay, 206,613 tons. For the year ending 31st March, 1877, the returns were—wheat, 401,417 acres; oats, 115,209 acres; barley, 25,034 acres;

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potatoes, 40,450 acres; hay, 147,408 acres; and green forage, 362,554 acres; yielding wheat, 5,279,730 bushels; oats, 2,294,225 bushels; barley, 530,323 bushels; potatoes, 134,082 tons; hay, 180,560 tons. From these figures it will be seen that there has been an increase in both the average and produce of wheat and potatoes, and a decrease in oats, barley, and hay. The average produce, however, is lower per acre than that of the previous year, being in 1876, wheat, 15·49 bushels; oats, 21·92 bushels; barley, 22·20 bushels; potatoes, 3·37 tons; hay, 1·33 tons; and in 1877, wheat, 13·15 bushels; oats, 19·91 bushels; barley, 21·18 bushels; potatoes, 3·31 tons; hay, 1·22 tons.

With the quantity of wheat produced may be taken into account the quantities imported and exported, and with these must also be taken into account the manufactures of wheat, namely, flour, bread, and biscuit, the whole being known to the trade as breadstuffs. The statistics of the colony taken from 1836 (assuming that one bushel of wheat produces forty-five pounds of flour, bread, or biscuit), show that in almost all the years Victoria has had to import breadstuffs largely in order to supply the requirements of her population, and in three years only has there been a residue, and in those but a small one, remaining for export. The three years referred to are 1870, 1873, and 1874. In the first of these the exports of breadstuffs exceeded the imports by 95,654 bushels, in the second by 138,088 bushels, and in the third by 40,714 bushels. In 1875, although in an official report laid before Parliament it was anticipated that there would again be a surplus of breadstuffs to the amount of about 20,000 bushels, it turned out that the demand exceeded the supply, and that it was found necessary to import no less a quantity than 200,369 bushels of breadstuffs over and above the quantity exported.

The following are the proportions per cent. which the land under each of the principal crops has borne to the total land under cultivation in the last two years:—For 1875-6, wheat, 28·52; oats, 11·01; barley, 2·80; potatoes, 3·27; hay, 13·78; green forage, 27·37; other tillage, 13·25; total, 100·00. For 1876-7, wheat, 32·61; oats, 9·36; barley, 2·03; potatoes, 3·29; hay, 11·97; green forage, 29·45; other tillage, 11·29; total, 100·00. It will thus be observed that in pro-

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portion wheat and green forage covered a larger area, and the other crops a smaller area in proportion to the total cultivation, in the latter year than in the former.

Other crops, less important than those already named, are grown to a certain extent in Victoria. Some of these are raised in gardens and on smaller lots than those which the collectors are called on to visit, and therefore the full extent to which they are cultivated does not appear. For the year 1876-7 these crops are shown as follows:—Beet, carrots, parsnips, and cabbage, 571 acres, 3430 tons; canary, 30 acres, 183 bushels; chicory, 225 acres, 980 bushels; cocksfoot, for seed, 13 acres, 230 bushels; flax, 3 acres; fibre, 2¼ cwt.; linseed, 52 bushels; hops, 225 acres, 129,136 lbs.; maize, 1609 acres, 25,900 bushels; mangel-wurzel, 1285 acres, 15,386 tons; mustard (white), 74 acres, 185 cwt.; onions, 720 acres, 71,580 cwt.; opium poppies, 4 acres, 60 lbs.; osiers, 5 acres; peas and beans, millet and sorghum, 21,235 acres, 373,857 bushels; prairie grass, for seed, 75 acres, 12 bushels; grown on 3 acres only, 72 acres having failed; pumpkins, 19 acres, 77 tons; rape, for seed, 10 acres, 20 bushels; raspberries, 10 acres, 51 cwt.; rye and bere, 1153 acres, 15,277 bushels; rye grass, for seed, 1851 acres, 28,209 bushels; strawberries, 21 acres, 1509 cwt.; teazles, 3 acres, 19,000 number; tobacco, 1479 acres, 14,413 cwt.; turnips, 224 acres, 1769 tons; vetches and tares, for seed, 8 acres, 47 bushels; vines, 4765 acres; wine, 481,588 gallons; brandy, 3725 gallons.

In addition to the area under these crops, the following land was returned as being comprised in gardens and orchards in the same year:—18,641 acres, being an increase of 880 acres on the previous year.

Ten acres under olives, and eleven acres under mulberry trees, are also returned for the year. The mulberry trees numbered 11,010, and are grown for the purpose of feeding and rearing silkworms, this being an industry, which, so far as it has gone, has been attended with great success in Victoria. The previous year there were 23 acres under mulberries, with 30,650 trees. Of these, no fewer than 25,000 trees, brought from China, France, and Italy, were planted by a company established near Castlemaine. This company exported in 1875, over 100 ounces of silkworm grain to the north of Italy,

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where it is said to have created quite a sensation amongst the purchasers on account of its healthy appearance. Some cocoons were also sent, and were highly approved of by competent judges. No particulars as to the olive crop have been given.

Mulberry and olive trees are frequently grown in gardens, and there is no doubt that both are far more extensively cultivated than the agricultural statistics indicate. With regard to the former, however, it is to be deplored that although the colony presents special advantages for their cultivation, a large plantation of them is reported to have been abandoned since last year, owing to there being no demand for their produce, which will account for the discrepancy which appears in the statistics of the two years. Raspberries, and strawberries too, are cultivated to a considerable extent in private gardens, so that far more are produced than appear in the statistics. This is also the case with oziers for basket making, which are often grown in small patches, in swamps and on the banks of streams, and do not come under the notice of collectors of statistics.

Land in fallow is included in land in tillage. The quantity of fallow land in 1876--7 is returned at 84,159 acres, as against 97,133 acres in the previous year.

The number of hands employed on farms during the year ending 31st March, 1877, was 63,394 males; 28,747 females; total, 92,141; being an increase of 3422 persons over the previous year. These figures include the owners of holdings, and only refer to alienated land of which no portion is subject to a squatting license. The rates of wages for agricultural labour on farms for the year 1876--7, average as follows, board and lodgings being given in every case in addition to wages, and there still being, as there has always been, a great scarcity of labour, especially in the busy season:—Ploughmen, per week, 21s. 3d.; farm labourers, 17s. 4d.; married couples, 26s. 3d.; females, 10s. 8d.; mowers, 31s. 1d.; mowers, per acre, 5s. 9d.; reapers, per week, 33s. 4d.; reapers, per acre, 12s. 11d.; Threshers, per bushel, 8d.

The number of holdings of various sizes, and the extent of occupied and cultivated land embraced in them, are shown as follows. It must

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be noticed, however, that these statistics, in common with all others concerning agriculture, contain no account of holdings which are not over one acre in extent, or of land which does not appear to be in the *bonâ fide* occupation of some one living on or near the ground, or of any which is occupied for other purposes than agriculture or the keeping of live-stock, or of any Crown lands held under pastoral licenses:—Holdings of from 1 to 4 acres, 1673; land in occupation; 4874 acres; land under tillage, 2836 acres. From 5 to 14 acres, 3536, land in occupation, 31,138 acres; under tillage, 13,981 acres. From 15 to 29 acres, 3897; land in occupation, 80,309 acres; under tillage, 25,333 acres. From 30 to 49 acres, 3284; land in occupation, 125,895 acres; under tillage, 34,023 acres. From 50 to 99 acres, 5998; land in occupation, 432,307 acres; under tillage, 93,693 acres. From 100 to 199 acres, 8103; land in occupation, 1,144,521 acres; under tillage, 204,474 acres. From 200 to 320 acres, 11,664; land in occupation, 3,315,835 acres; under tillage, 415,368 acres. From 321 to 400 acres, 1132; land in occupation, 407,982 acres; under tillage, 62,586 acres. From 401 to 500 acres, 920; land in occupation, 414,704 acres; under tillage, 60,201 acres. From 500 acres upwards, 2915; land in occupation, 7,929,938 acres; under tillage, 322,736 acres. Being a total of 43,057 holdings; land in occupation, 13,855,003 acres; and land under tillage, 1,231,105 acres; the average size of holdings being 322 acres; the average per centage of occupied land, enclosed, being 91·7; the average percentage of occupied land cultivated, 8·89; and the average area cultivated by each holder being 28·6 acres.

The average prices of the agricultural produce in 1877 are:—Wheat, 5s. 10d. per bushel; oats, 3s. 7d.; barley, 3s. 10d.; maize 4s. 4d.; hay, £4 13s. per ton; potatoes, £2 14s.; mangel wurzel, £1 11s. 6d.; showing a considerable increase in prices over the previous year in all those products, except barley and maize, the former being at the same price as, and the latter at a slight reduction from, that of 1876.

The standard weight of crops in Victoria is reckoned at 60 lbs. per bushel for wheat and maize; 40 lbs. for oats; and 50 lbs. for barley. The actual weight, however, varies in different districts, wheat varying from 58 to 64 lbs.; average, 61 lbs.; oats, from 35 to 44 lbs.

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average, 40 lbs.; barley, 45 to 56 lbs.; average, 51 lbs.; maize, 50 to 60 lbs.; average, 55 lbs. These averages have been the weights of produce since 1863, except in the case of barley last year, when that article averaged 1 lb. lighter.

The statistics of live-stock on farms and lands unconnected with squatting stations show that there were horses, 177,483; cattle, 959,146, of which 264,648 were milch cows; sheep, 6,444,786; pigs, 171,729.

In order to afford an idea of the extent to which farming is carried on in the colony, it may be here recorded that the approximate value of agricultural implements and machinery on farms, was valued, on the 31st March, 1877, at £1,734,976; and of improvements, at £13,754,526; a total of £15,492,502.

In proceeding to the consideration of what may fairly be called new agricultural industries in Victoria (inasmuch as although they, or some of them, have been in existence for years, still it has been merely experimental cultivation, and, with the exception, perhaps, of the culture of the grape vine, and the manufacture of wine, never have been gone into with the object of producing a staple commodity), it may not be out of place to mention that they have long commanded the attention of the most eminent scientists of the colony, and that numerous and exhaustive reports and treatises have from time to time appeared in the public press with the object of attracting attention to the subject.

More especially has attention been drawn to the cultivation of the Vine, from the fact that the vine would thrive and bear fruit luxuriantly in the Victorian climate and soil. Although both these are generally more suitable on the north than on the south side of the Great Dividing Range, yet so long back as 1846 vineyards were established in the district of Geelong, and in the face of many obstacles, such as the difficulty of procuring vine-cuttings suitable for the soil, the ignorance of the proper management of the vine on the part of new cultivators, the indiscriminate mixing of various kinds of grapes for pressing, the want of proper cellarage, and the remunerative rate of wages for other pursuits, vine-growing slowly but surely made progress, the more that of late years a few vignerons from the

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continent of Europe have planted vineyards, and so far introduced the systems in use in their respective countries, while a knowledge of the varieties of the grape and the best methods of cultivation have been imparted through the medium of the press. The requisite knowledge and experience for the cultivation of the vine are by no means difficult. Climate and soil have done so much that a little observation, inquiry, and natural tact, with advice or assistance from properly trained vignerons, will enable a man to master a sufficient knowledge of the subject to warrant him in commencing operations for himself.

A large amount of capital is now invested in the culture of the vine. In 1856, there were 279 acres of vineyards, yielding 11,000 gallons of wine, and 340 gallons of brandy. In 1869 there were 4950 acres, on which were grown 9,230,531 vines, yielding 577,287 gallons of wine, 878 gallons of brandy, and 24,980 cwt. of grapes for sale, and in 1877 there were 4765 acres, on which were grown 7,938,512 vines, yielding 481,588 gallons of wine, and 3725 gallons of brandy, a falling-off from the previous year, in extent of vineyards, number of vines, and produce of wine, but a very large increase in the quantity of brandy made.

Generally speaking, the Victorian wines are good in their several kinds, but it must be noted that whether light or full bodied, they are the produce of French or German vines. Except the Verdeilho (Madeira), scarcely any other is to be found as a standard sort, although in the valley of the Murray all the Spanish vines would have a fine chance, for there a deep gravelly soil, heat and shelter, and no hot winds, indicate their natural home. The wines from the north of the Dividing Range still maintain the high standard for which they have been known for many years. Owing to the great variety of climate, and the abundance of fine aspects for vineyards in the general contour of the country, Victoria is fortunately capable of producing, and does produce, wines which can be advantageously classified with many of the European kinds. In the Melbourne Exhibition of 1875, she took in all 99 prizes, being 35 first-class, 24 second, 29 third, and 11 fourth class, the samples being as follows:—*White*, Mixed, Riesling, Chasselas, Verdeilho, Nice,

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Sherry, Pedro Ximenes, Ugni Blanc, and Roussette; *Red*, Hermitage, Carbinet, Gamais, Mourvedre or Esparte, Mataro, Mixed Burgundy, Shiraz, Black Cluster, Malvoise, Grenache, Leverdun or Glory of Australia, Pineau, Malbec and Muscatel. Of the white wines the Riesling, of which there were 26 samples, took 17 prizes, and of the red, the Hermitage, out of 35 samples, took 29 prizes. The Ararat district showed 15 samples, Beechworth 6, Castlemaine 14, Echuca 12, Geelong 8, Goulburn 12, Melbourne 28, Murray 4, and Sandhurst 41, making in all 140 exhibits, which took 99 prizes; New South Wales, with 45 exhibits, taking 39, and South Australia with 66 exhibits, 55 prizes. At the Philadelphia Exhibition, 1876, prizes were awarded to Victorian wines.

In connection with Victorian wines, Mr. Lesley A. Moody, Chief Inspector of Distilleries, Melbourne, reports:—"The result (of analysis) corroborates an opinion which I had entertained for some time, that the natural wines of the northern portions of Victoria develop more alcohol than natural wines have been generally considered to be capable of doing, and range much higher in this respect than the British customs standard of 26 per cent. of proof." Again, "The quality of the wines tested was in general very good, and in many cases might be called excellent. The speciality of most of the produce of the vineyards situated in the northern portion of the colonies is that it is full-bodied, rich, and fruity, caused, doubtless, by the greater warmth and dryness of climate there, which ripen the grape thoroughly, and give a high gravity of must. The characteristics of these wines are similar to those of Spain and Portugal, while those made in the southern districts resemble the wines made in Germany and the Rhine, and the northern and midland districts of France. The produce of the same description of grape grown in the districts of the north of the Dividing Range, and that grown to the southward or seaward side, makes wine of a distinctive character. My experience of some years in the vineyards of the colony leads me to the conclusion that the character of the wine made is improving year by year; and as Victoria possesses soils and climates of such variety, and so suitable for the growth of wines of so many descriptions, and of a superior class, I am sanguine of a great future for

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this produce when greater experience, knowledge, and capital, are brought to bear on it, and vignerons can be induced to see the policy of limiting their vines grown to those only which experience shows to be suitable to the soil and climate of their vineyards. A few good wines will find a readier market, be easier and more cheaply manufactured, and therefore more profitable, than a large variety of medium quality."

From this undeniable testimony as to the high character of Victorian wines, and from the facts that they command a ready market, and that there are millions of acres of land having soil available and suitable for their growth, and a climate which will bring them to perfection, it cannot be, but that with the influx of vignerons from France, the Rhine, and the Mediterranean coast, will come the time when Victoria shall vie with the older countries of Europe, in being looked upon as one of the finest wine-producing countries in the world.

But not only in the direction of the cultivation of the vine is there an opening for the overcrowded peasantry and small capitalists of southern Europe. The soil and climate of the colony are equally suitable to the growth of other southern products. And first the Olive. As yet, but little has been done towards the production of this valuable fruit tree, but even that little has proved unmistakably that it will flourish and that its fruit will ripen in Victoria as well as in its native soil, if properly planted and tended during the earlier stages of its growth.

In the year 1871 a Royal Commission was appointed to investigate and report on the establishment of rural industries in Victoria, and the acclimatisation of the olive was one of the subjects which first engaged their attention. It is due, however, to the energy displayed by the Rev. Dr. Bleasdale, that an impetus was given to the industry, and that the enterprise assumed a tangible shape. That gentleman, having been entrusted by the Commissioners with the duty of procuring plants of the olive tree, and of superintending the planting of them, procured one hundred truncheons of 5 feet in length and from two to three inches in diameter, from olive trees which had already borne fruit in South Australia. These he divided into two

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lots of fifty each, one lot being sent to Sunbury, about a dozen to be planted in the vineyard of the Hon. J. G. Francis, and the remainder in the grounds of the Industrial School, this having been done mainly with a view of testing the different aspects and soils. These were planted under the direction of Mr. Baldini, a gentleman thoroughly acquainted with olive growing as carried on in some of the cooler climates of Italy, who showed the work-master at Sunbury the method usually adopted in the northern parts of that country, when truncheons are planted. It may, therefore, be taken for granted that the Italian method of planting had a fair trial. The remaining fifty, except a dozen planted at Essendon, were planted in the gardens of the Acclimatisation Society at the Royal Park, Melbourne, by a native of Oporto, carefully in accordance with the mode of planting employed in Portugal. Besides these, several hundred cuttings were planted in various parts of the colony, and in various ways, and the result, up to now, has been satisfactory, having done all that was desired, namely, proved that the olive will thrive in Victoria. The foundation of the olive groves has been established, and it only needs knowledge and enterprise to carry out the profitable industry, the fabrication of olive oil, for even now, from the olives grown on the few trees that have arrived at full bearing, has been expressed oil which has been pronounced by competent judges equal in quality to the best French or Italian olive oil.

The Fig, that is to say the green and red fig, is already acclimatised in Victoria, and has been not only brought to perfection so far as the growth is concerned, but has been dried, and in the form of dried figs, has been exhibited and offered in the market. But it is a fact that the true Turkey white fig, the valuable fig of commerce, has not been introduced into the colony. Why this is so it is difficult to determine, for wherever the olive will ripen the fig will flourish, and the Victorian climate appears to be especially favourable to the production of this fruit; nor is its cultivation attended with much difficulty. The figs introduced into Victoria, and propagated by means of seeds, suckers, or cuttings, have been very prolific, are great fruit bearers, and exist to a considerable extent,

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principally, if not wholly in gardens. They are generally of the green or red sort, and assume the form of shrubs or spreading bushes, rather than of trees. The Rev. Dr. Bleasdale, who has studied the subject in Portugal, where figs are largely grown, says that although it might appear ungracious and dogmatic to say that there was not a true or white fig in the colony, still he believed that such was the case—at all events, in all his experience he had never seen one. All he had met had a taint of red in their fruit, and did not shape for forming trees, but only bushes. The true fig tree has no business to bear other than true white or yellow fruit, as its true and proper autumn crop, for there are two crops annually. It remains then for those who understand the subject to cultivate, not only that, but the black or dark purple fig in the colony, and thus to bring to a practical issue the production and drying, which latter presents no special difficulties, of this valuable and profitable fruit.

Amongst the new industries introduced of late years into Victoria, none perhaps, have attracted more of public attention than the production of Silk. A lady, Mrs. Bladen Neill, who certainly deserves well of the colony for her exertions in this direction, has already done very much towards affording a knowledge of the process of production of this valuable article, and in Victoria, with her suitable geographical position and meteorological peculiarities, and her large consumption of imported silks, much more remains, and ought to be done in this direction. The white mulberry *(morus alba)* the best and richest aliment known for the silk-worm, grows luxuriantly, and the true silk-worm *(Bombyx Morus)* thrives well in Victoria. Mulberry trees are grown in nearly all gardens of any pretensions, and in the Botanical Gardens and Royal Park, Melbourne, and at Sunbury, and the breeding of the silk-worm has long been a favourite amusement with the ladies and youth of the colony.

The samples of silk shown at the various Exhibitions in Melbourne and elsewhere, cannot be surpassed in fineness and strength of texture by silk produced in any part of the world. As yet, however, few attempts have been made at the manufacture of colonially

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produced silk, beyond reeling it off the cocoons, and making it into hanks.

Although, as has been stated, mulberry trees are grown far and wide, still the number of full-grown trees in any one locality is limited, and there is not therefore a large and readily available supply of fresh leaves for the sustenance of any very large collection of silk-worms. Before, then, anything can be done in the way of extensive production of new silk, the foundation must be laid by the formation of numerous large plantations of the mulberry tree in the neighbourhood of the centres of population. Nor is there either difficulty in, nor lack of available land for its cultivation. It is a hardy tree within the limits of the vine climate, and grows rapidly and vigorously everywhere throughout the colony. The soil most suitable is a dry sandy loam, or other moderately fertile, well drained site, if possible on a gently sloping surface, a heavy alluvial soil, swampy or difficult to drain, being avoided, for although the tree will flourish there the leaves will supply a coarse unwholesome food for the worms, which will bring on disease, and will give an inferior quality of silk.

Besides the true mulberry tree (*Morus alba*), the soil and climate of Victoria is well adapted to growing the Mahilla Mulberry Shrub (*Morus multicaulis*), which is valuable for supplying a copious supply of tender leaves for the worms in the first stage of their growth.

Nor are the mulberry and the silkworm proper the only sources of silk supply. There are numerous silkworms of different species which feed on the leaves of other plants, but which are far inferior in value to the true silkworm, as, although they produce a strong lustrous silk of dark-yellow colour, it is open to the great objection that it is almost impossible to unwind the cocoon, and notwithstanding the fact that the French have succeeded after repeated efforts in the *filature* or reeling off the thread of the cocoon of these, the *Eria* or *Arrindy* worms, the trouble, delay, and expense of the process puts a practical bar to it, and the arrindy cocoons are now converted into *Bourre de Soie*, that is, the cocoons are carded into a kind of wadding, which is then spun into thread like cotton or wool. The *Eria*, *Arrindi*, or Palma Christi (*Bombyx Ricini*),

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feeds on the *Ricinus* or castor-oil plant, and this worm ought to be largely produced in Victoria, for the castor-oil plant grows with the ease and rapidity of a weed, and is in leaf throughout the year. The castor-oil plant has the additional recommendation of its seeds furnishing, by a simple process of pressing, the well-known medicinal drug, castor oil.

Other descriptions of silkworms are known to the Chinese and Japanese, and feed on the Japan varnish tree and the oak, and the Island of Madagascar is remarkable for the variety of silk-producing worms found there. These latter, however, belong to the curiosities of silk production, and would not, perhaps, thrive in Victoria. Enough has been said, however, to show that a vast field of enterprise is open to skilful and energetic sericulturists from France and Italy, in order to develop an industry which is second to none in the world for the demand for its product, and the pecuniary value of its results, if carried out in an extensive and spirited manner.

Although the Orange and Lemon have for a considerable time past been cultivated with some show of success in Victoria, and especially in the neighbourhood of Melbourne, still it is the opinion of many experienced persons that the climate is unsuitable. Certain it is that the oranges produced, although hardly sweet enough, and somewhat thick-skinned, have been good, but have mostly been grown in well sheltered gardens and choice spots. What is wanted, however, from a commercial point of view, is not that this superb fruit should be cultivated with the skill and care of an accomplished horticulturist, and the superior tilth and fertility of a sedulously tended garden or nursery, but its growth on a large scale, say in numerous orangeries of from ten to fifteen acres each, with simply the ordinary care and attention devoted to orchards of less important fruit, and for this purpose it is questionable whether the neighbourhood of Melbourne, or indeed any of the districts lying south of the Dividing Range, are well adapted. True it is that the orange flourishes to perfection in the same climatic belt as that which suits the olive and the fig, or even the somewhat cooler vine climate. But, at the same

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time, the tribe or genus Citrus, of which the orange (*Aurantium*) is the noblest species, advances, with respect to some of its species, such as the lime and the shaddock, into the tropics, where the olive will not bear fruit.

The fact is, that the mildness of the Melbourne winter and spring are all that could be desired, but that the summer and autumn have not the duration of a high temperature sufficiently prolonged to furnish that exquisite mingling of the saccharine and acid juices of the fruit in the full perfection that the orange is capable of exhibiting, and that it does exhibit in the fruit grown in warmer climates. The true habitat of the orange in Victoria, therefore, grown for profit, is on the sunny slopes north of the Dividing Range, in the direction of the Wimmera, the Murray, Echuca, Sandhurst, Maryborough, Moliagul, and other corresponding districts wherever there is rich soil, and means of copious irrigation. And of spots favourable there is no lack, so that there is little fear that, when the matter is taken up in earnest, and by persons who know practically the requirements of the tree, and the proper method of its cultivation, the growth of this valuable fruit will become an important industry.

The five divisions of the Citrus tribe are the orange, the citron, the lemon, the lime, and the shaddock, with their numerous varieties. The orange and lemon, and perhaps the citron, are, however, those only which concern Victoria, and experience has proved that no part of the world has a more suitable climate and soil for the production of these valuable fruits than the south-eastern districts of the Australian continent, including New South Wales, Victoria, and South Australia. In these colonies, especially on the Hunter River, and the Parramatta River, in New South Wales, trees of from twelve to fifteen years old will produce from thirty to forty dozen oranges each tree, and in some cases a hundred dozen have been gathered from trees forty years old. The favourite varieties, all flourishing well in New South Wales, are as follows:—The Bahia, or Navel orange; the Sabina, the China, the Maltese, or Blood; the Siletta, the St. Michael's, the Genoa, the Sorento, the Poor Man's, the Seville, the Tangierine,

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the Canton Mandarin, the Emperor of China Mandarin, the Emperor Mandarin, the Thorny Mandarin, and the Cumquat. Of these the St. Michael's, Navel, Poor Man's, Seville, Cumquat, and the various Mandarin oranges, and several kinds of lemons have been and are satisfactorily brought to maturity in Victoria, and there can be no reason why, with suitable soil and proper culture, the colony should not compete in the production of this noble fruit with her elder sister colony of New South Wales.

The Lisbon lemon and the Sweet lemon have already been acclimatised and grow to perfection, the trees being hardy, easy of cultivation, free growers, and very productive.

It is somewhat unaccountable that with the advantages of climate and soil, so well adapted to the growth of the vine, there should have been so much indifference displayed by Victorian vignerons with regard to the cultivation of grapes for drying, or converting into Raisins and Currants. They have been and are, it is admitted, produced in the colony, but only on a very small scale, but even small as it is, the fact has been proved by actual experience that with a moderate amount of attention they will flourish here, and may be rendered an important and prosperous undertaking by any one capable of carrying it out. The grapes mostly used for drying into raisins are the fleshy sort of the Muscat, the Sultana, and the Black Calabrian, which latter kind is unknown in Victoria, and the Sultana is not very well known. But raisins from the Muscat of Alexandria grape have been successfully made, and excellent raisin grapes, Lexia and Muscatel, will both come to perfection in the colony, as has been proved beyond doubt.

Currants, dried from the small Zante and Corinth grape, have also been produced in small quantities, the fruit growing well in the warmer parts of the colony.

Almonds have been grown for years in the neighbouring colony of South Australia, and their production offers a fair field for enterprise in Victoria, where some few varieties are already established. This fruit is cultivated largely in France, Spain, Italy, Portugal, Algeria, and other Mediterranean countries, whence it forms a very valuable article of export. Persons from France and Spain experienced in

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their culture would find an opening here, for, as has been stated, both the climate and soil of Victoria have been proved to be favourable to its growth.

The establishment of plantations of the Sweet Chestnut (Fagus castanea, Castanea vesca), on a large scale, has long been a *desideratum* recognised among men of science in Victoria. The timber of the chesnut tree is exceedingly valuable for the manufacture of wine casks, as it contains no matter which can give the wine an objectionable taste or colour. Besides this the tree is highly ornamental, and as it ages, becomes very large and umbrageous. Its fruit too, which in Spain, Portugal, and Italy contributes very largely to the luxury and sometimes the necessity of life, is a commodity which at present, in South Australia and everywhere it is grown, commands a very high price in consequence of the scanty supply. The tree is one that is hardy, grows freely, and is easily transplanted when young, but which requires a good soil, requiring sufficient depth of soil or open rock to admit of its forming a tap root. In Portugal it is found to flourish best in gravelly districts, and on the slopes of rotten rocky hills. As any place, however, having moderate drainage, and capable of growing beech or ash, would be suitable, there seems no difficulty in fixing on abundance of suitable sites in Victoria.

The varied resources of soil and climate in Victoria are proved in nothing so much perhaps as in the fact of the production of Opium of a superior kind, the choicest yielding ten per centum of morphia, being the produce of the mountain valleys in North Gipps Land. There is, however, at present a grave obstacle to its being cultivated as an article of commerce, and that is the scarcity of juvenile labour, the fittest and cheapest for the purpose. The crop of opium, which is gathered in December or January, must be got in within six weeks at the utmost, and as in a plantation of five or six acres in extent, it would require a dozen hardworking youths to go over the vast number of poppy heads in due time at the period of gathering the milky sap from the carefully wounded capsule which forms the opium without waste, and with cleanliness, the vast amount of work necessary to gather a large harvest is easily to be seen. Where, however, the grower, either by means of his own numerous family, or with the

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assistance of the children of neighbours, has been able to overcome the obstacle, the production of opium in Victoria has been very profitable. The value of opium depends on the quantity of morphia it contains. Ten per cent. of morphia is considered a high rate, and Victorian opium is found to contain from 7 to 10 per cent. A fair average yield is 40lbs. to the acre, the price varying, according to quality, from 20s. to 30s. per lb. The profitable nature of the production of this plant may be estimated from the fact that about 48,000lbs. are imported into Victoria annually, to say nothing of the importation into the other Australian colonies. Besides a large quantity for colonial consumption, there would, in all probability, be a large export demand, especially to America, where enormous quantities of this drug are used mainly in the composition of American patent medicines.

One of the most important of the new industries of the colony, and one to which the special attention of farmers seems to have quite recently been attracted, is the culture of the Tobacco plant. The unprecedently rapid increase in the area of land under tobacco this year (1876-7) as compared with previous years, shows that agriculturists have at last opened their eyes to the great advantage accruing from the production of this crop. In 1874-5 there were 733 acres under tobacco; in 1875-6 there were 782 acres; while this year there are no fewer than 1479 acres. The crop for 1875-6 was for some reason not very clearly understood a failure in most districts, the quantity raised being only 501 cwt., so that it would be unfair to compare this year's crop with last year's, but the year previous (1874-5) there were raised from 733 acres 6839 cwt. of tobacco, while this year (1876-7) from 1479 acres has been produced 14,413 cwt. The principal portion of this crop has, as hitherto, been grown in the northern and north-eastern part of the colony, notably in the Beechworth district, where the cultivation of the tobacco plant has long been viewed with favour. Although it is many years since the attention of farmers was first directed to this plant, and since, in fact, a commencement was made in its culture, and considerable quantities of the leaf produced, still it was found for a long time that, owing to the want of experience and skill on the part of

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growers, more particularly with regard to the process of curing the leaf, it was impossible to produce a good quality of tobacco, and that the most of that produced was only fit for "sheepwash." The consequence of this was that the prices offered for it were not remunerative, and tobacco growing fell, as a consequence, into disfavour. Still, in the face of these discouraging circumstances, there were found persons sufficiently confident of future success to persevere, and the consequence was that with enlarged experience and practical instruction on the subject, they have succeeded in producing a very fair marketable article in the form of cured tobacco leaf, which, mixed with American leaf, is now worked up by Melbourne manufacturers. As compared with the demand the supply of Colonial leaf is very small, and there is ample room for extending the operations of the growth of this article to an almost unlimited extent, inasmuch as by still further improving the quality of the tobacco an export trade will spring up, and thus a very large demand arise. That there is a tendency to operate in this direction is clearly proved by the rapid strides lately made in its culture, as shown by the figures quoted. Samples shown in the leaf as well as manufactured from Oxley and other places in the Beechworth district, near the Murray river, which forms the division line between Victoria and New South Wales, show the decided fitness of the soil and climate of (at least this part of) Victoria, for the production of superior tobacco. The varieties of the tobacco plant grown in the colony are Virginian, Maryland, Kentucky, and Connecticut—all American sorts—and although the climate seems favourable to the much-esteemed Syrian and Persian kinds, no attempts have as yet been made to experiment with their seed.

The cultivation of the Flax plant is an industry which, started some years since in Victoria, seems almost to have died out in the colony, the reason of its decadence being the want of the proper machinery for dressing the fibre, and the difficulty, therefore, of marketing the crops, and, with the exception of a very few settlers from Scotland and Ireland, the general want of practical acquaintance with the cultivation and management of the plant on the part of those who grew it. In 1868 there were thirty-one, and in

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1869 thirty-four acres of land under flax in the neighbourhoods of Melbourne and Geelong, and in the former year 1060 cwt. of fibre, and in the latter 271¼ cwt. of fibre and 150 bushels of linseed were produced, but since then there has been a gradual diminution; until this year there were only three acres under flax, producing two and a-quarter cwt. of fibre and fifty-two bushels of linseed. And yet the importance of the cultivation of this plant is fully recognised both by the Government and the mercantile community of the colony, the import of linseed oil being over 100,000 gallons per annum, and there being an immense demand for the dressed fibre both of flax and hemp for rope manufacture. At present the colonial portion of the supply is chiefly furnished from South Australia, where the industry is pretty extensively carried on. In order to encourage the growth of flax in Victoria the Government some time since offered to furnish seed and information regarding its growth and preparation to persons desirous of engaging in its cultivation, and to grant bonuses to those growers or cultivators who produced the most marketable samples of fibre, but this offer does not appear to have been availed of to any extent. And yet, when it is known that the produce of a fair crop, cultivated with care on an average soil, will be per acre at the rate of five cwt. of dressed fibre, worth from £3 to £4 per cwt., with a yield of linseed of from ten to twelve bushels, worth 10s. per bushel, while the local demand for linseed oil and linseed cake alone is very large, there ought to be no hesitation on the part of farmers engaging in flax culture.

The cultivation of Beetroot in Victoria is no new thing; years ago it was grown, and with such success that a distillery was established for the purpose of obtaining spirit from the root, an article by no means objectionable, considering the lack of both appliance and experience on the part of the promoters, being produced. This enterprise was, however, given up after a time, and a joint stock company established instead, for the purpose of extracting sugar from the beet. Machinery was imported, and a considerable outlay gone into for the purchase of appliances with the latest and most approved improvements, and operations commenced at

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Staughton Vale, near Geelong. The result was success. Sugar of superior quality, and such as was sold side by side in the Melbourne market, in competition with cane sugar from the Mauritius, brought good prices. The first sale of the Victorian Beetroot Sugar Company's sugar was on Monday, 1st December, 1872, the market reports of sales in the next day's newspapers stating that Mauritius cane sugar realised 25s. 9d., 27s. 6d., 30s., 33s. 6d., 36s. 9d., and 37s. 6d. per cwt. according to quality, after which "there was a considerable attendance of the trade, and much interest excited, on the occasion of the disposal of the first production of the Victorian-grown Beet Sugar Company (Limited), under whose instructions were next sold 800 bags, representing about twenty-five tons of Victorian-grown beet sugar, of qualities ranging from low to good counters, which realised from 30s. 6d. to 33s. per cwt. After the auction sale, a small parcel of very superior quality of the company's sugar (J. W.), was sold at £37 10s. per ton," a price equal to that of the best Mauritius cane sugar, as given in the quotations just cited. From this it may be seen that the manufacture of sugar from beetroot is not only possible, but that it is actually an accomplished fact in the colony. Both soil and climate are suitable for the growth, and although in the statistics no record has been furnished of beet grown specifically for sugar manufacturing purposes since 1872, when 4131 tons were grown on 239 acres of land; still, under the head beet, carrots, parsnips, and cabbages, 543 acres are returned, producing 3251 tons of those articles, of which beet, doubtless, furnishes a fair share.

Hops and Arrowroot are grown with much success in some parts of Victoria, more particularly in North Gipps Land, and have become staple commodities. Various other plants, such as Cotton, the Cork Oak, the Chinese Tea tree, &c., have been tried with varying success throughout the colony. They are all acclimatised in the Botanical Gardens, Melbourne.

Victoria has well been described as a country of vast forests and of treeless plains, for so strongly marked is the arboreal difference between various districts, that the definition is almost warranted by fact. The forest regions extend in an almost unbroken tract over

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the greater part of the southern and eastern mountain districts. Here it is that the eucalyptus flourishes in all its grandeur, attaining enormous dimensions, and forming inexhaustible supplies of valuable timber for this and succeeding generations. Of indigenous timbers, the most valuable is, undoubtedly, the Red Gum (Eucalyptus rostrata), a dense, hard wood, with a handsome curly grain, almost entirely free from the tendency to casting and longitudinal shrinkage which is the characteristic of other varieties of the eucalyptus, and as it is almost indestructible in damp ground or in salt or fresh water, it makes the best of all piles, being impervious to attack by the *teredo navalis*, for engineering works, nor can it be surpassed for any purpose, either engineering or building, where a resistance to sheer downward pressure is wanted. It is also unequalled as planking for bridges, wharves, or buildings. As sleepers it is considered first-class; red gum posts, although rough, will last nearly twice as long as any other, and is the favourite wood with wheelwrights for spokes and felloes of heavy wheels. The failings of red gum are that it has a short grain, which renders it unsuitable for horizontal bearing timbers in any but very short lengths, it cannot easily be obtained in long lengths and of reasonable diameter, and it does not split freely. Cut in the proper season, and properly protected from its tendency to sun-crack, it would, after proper and thorough seasoning, be eminently suitable to the requirements of the cabinet maker for the heavier portions of furniture, as it takes a fine polish, and cuts into good veneers. It has been used with great advantage for knees and the rigid portion of ships' framing, and for the fixed bearings, and even in some cases for the running bearings of machinery. As firewood it is exceedingly valuable and is looked upon as amongst the best sold for that purpose, as it generates a fine free flame with considerable heat.

The Blue Gum (Eucalyptus globulus) is restricted to southern and eastern Victoria, and to the colony of Tasmania; it grows to an enormous size in almost any kind of soil, and is well-known, not only for the value of its timber, but also for its vigorous growth and hygienic properties. It is true that all eucalypts partake

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of this latter property, but from the exceeding vigour and pleasing symmetry of the trees of this particular species, it has been denominated the representative type of the many kinds of the Australian gum trees. The wood of the blue gum is of a yellowish-grey tint, with a free, straight grain, of great strength and tenacity, and to be obtained in almost any lengths with moderate equality of section. Hence it is useful for piles, although, unlike the red gum, it is pervious to the *teredo navalis*. It is especially useful, from its flexible qualities, for heavy longitudinal beams, and makes excellent sawn and split material. A resin is obtained from this tree of a kino character, and a volatile oil from the leaves, together with a bitter principle in an amorphous condition, and an acid termed "eucalyptic acid." The oil and the bitter are well spoken of by the missionaries of the New Hebrides and South Sea Islands for ague and dengue fever. The tree, when in full growth, gives off an aroma under a genial atmosphere, which is acknowledged to destroy malaria and miasmatic poison.

Stringybark (E. obliqua) although much inferior, is a wood similar in appearance to E. fissilis, but having a browner tint. It supplies a good deal of the second-class sawn timber in the market, and being a free-splitting wood is useful for palings, shingles, posts, and rails.

Messmate (E. fissilis), is another timber, being, as its name implies, "free splitting," used for posts, rails, palings, and shingles, and not unfrequently for sawn stuff and wheelwright's work. It is also superior to white gum, being straighter in the grain, and splitting more readily. White Gum (E. goniocalyx), is found growing in swampy localities, and is liable to decay early, and is scarcely fit even for firewood, from its tendency to burn black without producing flame.

The Ironbark (E. sideroxylon) is a very hard and heavy wood, tenacious and strong, extensively employed by coachbuilders, cabinetmakers, and especially by wheelwrights for shafts and spokes. There are several other kinds of gum trees found growing intermixed with the species already described, but are not employed to any extent for mechanical purposes, chiefly for firewood; in some instances special varieties are peculiar to certain districts, as for

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instance, the Peppermint Gum tree (E. Amygdalina odorata) is met with on mountain sides or hilly slopes, occupying generally dry and poor soil; it is from this species that the well-known eucalyptus oil is obtained. The wood is but of little value; the tree bearing willow-like branches, with a leaf similar in appearance to an almond tree leaf, gives a pretty effect, and when grown in open ground grows evenly and with much foliage. A fine kino gum exudes from the trunk of the tree, and the leaves yield the oil. The nomenclature of many of our forest trees adopted by bushmen of the early days still holds its own, as for instance, appletree, a species of eucalyptus, honeysuckle, cherrytree, sheoak (sheick), and others.

The Blackwood and the Lightwood are usually regarded under the general name lightwood. It flourishes in the rich sedimentary soil, and the shelter and humidity of the ranges, where it attains large proportions. The timber of this tree is exceedingly valuable, being largely used for all kinds of cabinet work, as it has a rich colour, a beautifully marked grain, and takes a fine polish, not surpassed even by walnut, to which it bears some similarity. It has a close grain, and combines strength and flexibility with lightness.

The Murray Pine, a handsomely marked, useful wood, used in the northern parts of the colony for all kinds of purposes, is not much employed in Melbourne. It yields abundantly a resin, like sandarac, and is employed for the same purposes. During the hot summer months this resin drops from the tree and can be gathered up freely. The Myall, a smaller variety of the same wood, is highly scented with a pleasant aroma, and is used principally for stock-whip handles, wooden pipes, and other articles of turnery.

The ironbark, the hardest and heaviest of Australian timbers, is very tenacious and strong, however, and is used by coachbuilders and wheelwrights for shafts and spokes. Sheoak and Honeysuckle wood is mostly used for firing, although it is occasionally used by cabinetmakers for the sake of variety.

The Wattle, being several species of the Acacia, the timber of which is used for making staves for casks, is much esteemed for the value of its bark for tanning purposes, and their numerous flower branches

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for their grateful aroma. Ferntree and Pencilwood, although not much used, are sometimes, the former especially, cut into veneers.

These may be said to constitute the list of timber woods indigenous to Victoria, although from the great variety of climate and soil she possesses, there seems to be no reason why numerous other kinds of timber should not be grown within her borders. Thus, the coast-line would, in all probability, produce forests of Mediterranean firs, and pines from other countries, and might also grow the plane, the cork-oak, the sycamore and others; the forest and alpine regions would grow the oak, the beach, the birch, and forests of Baltic deal fir, silver fir and Norway spruce, particularly along mountain ridges, while in the northern parts of the colony might be raised many of the valuable woods of Italy, Spain, and Southern France. In fact, there might easily be acclimatised timber trees from all climes, excepting perhaps those of the warmer zones of tropical countries.

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CHAPTER IV.

PASTORAL PURSUITS, WOOL, TALLOW, &C.

THE pioneer of improvement in Australia is the squatter, and especially in Victoria, where in the old old time came the venturesome sheepfarmers from Tasmania and the then-known territory of New South Wales, of which this colony formed a part, with their flocks and herds; who, striking boldly into the unknown interior, sought "fresh woods and pastures new" for their ever-increasing stock.

At the outset Victoria, or Port Phillip, was only looked upon as one of the natural outlets for the ever-growing demand for country for pastoral purposes; and it is probable that for many years no future beyond its settlement into sheep or cattle runs was ever dreamt of even by the most sanguine of those who populated it. Squatters' stations, a few small townships where the runholders could, from time to time, obtain their supplies; and a port here and there, whence the wool and tallow could be shipped, and stores received in return, and thus from year to year the colony went on — progressively, it is true, but only though as a territory to be formed into vast, and so far as population was concerned, uninhabited estates, something like the ranches of the plains of Mexico and South America. No attempt was made toward the improvement of the soil, beyond the little cultivation for home use round the head stations of the "tenants of the Crown," as the large landholders were called. Without society, save that of his few shepherds and station-hands, the squatter dwelt in the wilderness, a king in the midst of his own holdings, living much as he listed, in accordance with his own rule and law, and building up in many instances a magnificent fortune.

But after a time there came a change. The discovery of gold in Victoria, and the consequent rush of adventurers from all parts of the world in search of the precious metal, first roused the

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squatter from his dream of unquestioned dominancy of the land. Far and wide into the heart of many a fair domain flocked tribes of hardy diggers, little regarding the squatters' right of first possession in their eager search for gold. Nor, after all, could the squatter object, for with the opening up of the goldfields in the interior came the settlement of hundreds or, it might be, thousands of men. These men must be fed, and there at once was established a ready cash market at a high price for his superfluous stock, and thus, although he was, no doubt, deprived for a time of the enjoyment of a portion of the land which he looked upon as his own by right, he received an advantage which far more than compensated him.

Legislation, too, from time to time, interfered with what was practically his monopoly of the lands of the colony, and restricted the privileges which had originally been granted him. As the thousands which the fame of the Victorian goldfields had caused to cluster here and there, gradually began to regard the country to which they had come as the land of their adoption, and as the future home of themselves and their families, instead of a mere abiding place for a season, in which to make money for the mere purpose of leaving it, so arose the necessity for provision being made by which they could settle on the lands—the more, as, in course of time, it was discovered that the soil was eminently suited to agricultural purposes, and the interior country just what was required for a portion of the teeming population which overstocked Great Britain, and which had no outlet except the United States of America and Canada. For many years it must be admitted that the principal cause which impelled emigration from Europe to Australia was the auriferous nature of the country; but since gold-digging, as a calling, has, compared with the number of the population, declined, the people have to a very large extent turned their attention to the occupancy of land in freehold for farm purposes, and it is through this fact that the privileges of the squatting community have been greatly restricted.

And this is only as it should be, and as in the very nature of things it must be in all new countries which enjoy freedom and

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liberal laws. First comes the adventurous flockmaster, taking up vasts tracts of country for the sustenance of his stock, territory which at the time is practically useless to the world. Then as population increases, so his holdings must gradually become more circumscribed, in order to make room for the new comers. As is only natural to be imagined, this invasion of what they considered their rights, was, and even now is, resolutely contested by the squatters who had so long held the tenure of the vast pastoral estates, and loud and bitter were their denunciations of a policy which deprived them of the lands which they had hoped to have held in perpetuity, regardless of the cry on every hand for the opening up of the country to the agricultural population.

Various schemes of land legislation were from time to time devised, but with little effect, until, in 1865, the Hon. James Macpherson Grant, then Commissioner of Crown Lands, succeeded in passing his comprehensive Land Act, which was further amended in 1869 by the Casey Act, the object of which was the settlement of the people on the lands of the colony—an Act which has cut boldly at the root of the difficulty, by selecting the best portions of the soil of the colony, whether held under squatting lease or not, and placing thereon, on farms of from 40 to 320 acres in extent, an industrious agricultural population. At first this was felt to be a sad blow by the squatters, who complained bitterly that they who had first opened up the lands should thus be ruthlessly despoiled of them.

After all, and although it must be conceded that to the original squatters a very large measure of credit is due, still it is clear that the good of the many is, and must be, paramount to that of the few, and that locking up the public estate in the hands of a few large runholders was conducive neither to the benefit of the people nor of the State.

But the depriving the squatters of their lands opens the way for other considerations, the first being that as the area of land held under pastoral license becomes more and more circumscribed, so will increased attention be devoted to the improvement of the grazing capacities of the smaller areas, and more especially to the improvement of grasses, and the introduction of systems of artificial irrigation. In fact, it may be said that already has the public mind,

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and especially that portion of it interested in pastoral pursuits, turned its attention to these important matters, with the object of multiplying the depasturing capabilities of the sheep-runs. In the olden days, when land was to be had for the finding, it mattered little to the squatter whether the land would carry one or five sheep to the acre—if his run were overstocked, he had merely to take up more country; but now the case is different, and improvement of his grass only will enable him to hold his own against competition. With this there must also be improvement in the breeds of sheep, for which there is ample room, for although, to the credit of some of the stockowners, they have spared no trouble or expense in the importation and breeding of the best kinds of both sheep and cattle, still no little advancement may yet be made in depasturing, in the prevention of disease, and in producing better qualities of wool.

As the lands of Victoria gradually become absorbed into agricultural homesteads for the people, and the squatting areas more and more restricted, so the squatters must, as did their predecessors before them, look across the boundary of the colony to the widely-spreading plains yet to be opened up and occupied in the Northern districts, and stretching away north and west to the very verge of the continent.

But even in Victoria, and within the circumscribed areas now available for pastoral pursuits, the squatters of the present day enjoy advantages which go a long way towards compensating them for the loss of their lands, and many of these advantages owe their existence to the very fact of the country having been opened up for settlement. The means of communication are rapidly and steadily extending and improving in all parts of the colony. With the increase of population and production, railways are being constructed, roads are being improved, and new ones made in all directions, and river steamers ply from one end of the navigable Murray to the other. The wool clips, that in the older days of bullock teams and bad roads, or no roads, used to take up many weeks in transmission from the station to Melbourne, or other port of shipment, can now be brought down, in many cases, in a few hours.

Another advantage is that the demand for wool is a steadily growing one. The increase of the wool trade from Victoria may

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easily be seen by the following figures:—In 1857 there were 15,940,827 lbs. exported, valued at £1,239,166. This had, in 1865, increased to 40,423,494 lbs., valued at £3,088,343, and in 1875 to 85,064,952 lbs., valued at £6,096,958. All these figures, however, are inclusive of wool imported from other places, and exported from Victoria; still an export trade that in twenty years has grown from one to six millions, or in forty years, from eleven thousand pounds to that amount, is surely one which ought to command attention, especially as the maximum in production here, or in consumption at home, is by no means reached.

As shown by the statistics, the squatting runs, and the area of land held under them, have steadily decreased since 1865, in consequence, of course, of the settlement of the country into agricultural holdings under the Grant Land Act. Thus, in 1866, there were 1129 runs in the colony, having an approximate aggregate area of 29,003,998 acres, while in 1876, there were only 822 runs, with an approximate aggregate area of 21,906,540 acres. And this decrease has been as gradual as it has been steady, and pretty much at about the same rate. Thus, in 1875, there were 865 runs, with 22,967,639 acres; in 1874, 864 runs, with 24,230,128 acres; and so on. The average area of the runs of the colony was 26,552 acres in 1875, and 26,772 acres in 1876. The rent in 1875 amounted to £139,304, and in 1876 to £152,664. The number of hands employed on stations for the year ending 31st March, 1877, was 4276 males; 1332 females; total, 5608. The rates of wages for station hands for the same year, were:—For stockmen, £49 8s. per annum; boundary-riders, £43 1s.; shepherds, £38 1s.; hutkeepers, £32 13s.; married couples, £59 13s.; females, £28 16s.; station labourers, 17s. 11d. per week; sheepwashers, 22s. 7d.; shearers, 14s. 9d. per 100 sheep shorn. All these rates of wages are inclusive of rations.

The following is an estimate of the live stock on the squatting stations for the last two years. It must be mentioned, however, that the returns have been compiled, as far as possible, from estimates supplied by the squatters in reply to inquiries made by the Government statist. In many instances these inquiries were not responded to, and in such cases it was necessary to supply the particulars from the returns of former years. It will be observed

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that there has been a decrease in 1877 from the previous year in horses and sheep, and an increase in cattle and pigs. In 1876, there were 196,184 horses, 1,054,598 cattle, of which 255,137 were milch cows, 11,740,532 sheep, and 140,765 pigs. In 1877, there were 194,768 horses, 1,128,265 cattle, of which 277,072 were milch cows, and 175,578 pigs. The live stock slaughtered in the year ending 31st March, 1877, were as follows:—For the butcher and private use, sheep and lambs, 1,704,929; cattle and calves, 166,638; pigs, 53,855; for preserving or salting, sheep and lambs, 287,315; cattle and calves, 10,525; pigs, 13,818; for boiling down for tallow, sheep and lambs, 185,965; cattle and calves, 24,400; pigs, 2700. Total—sheep and lambs, 2,178,209; cattle and calves, 201,163; pigs, 70,373; a general total of 2,449,745, against 2,073,302 in the previous year. The figures quoted above will give an idea of the extent and importance of the pastoral interest in Victoria, and will show to what a magnitude the colony has grown during the few years of its existence. They will also show that notwithstanding the large quantity of land withdrawn from the squatting stations, and devoted to agricultural purposes, the quantity of stock depastured on the pastoral lands remaining intact has not diminished in a corresponding degree, owing, no doubt, to the improvement in the grasses and in the grazing of stock.

The sea-board and the rivers of Victoria abound with excellent fish, many varieties of which are quite new to naturalists, but have been studied, classified, and described by the French Consul-General, the eminent naturalist, Count F. de Castelnau. Native game, hares, and rabbits abound; and many European song birds, and a few from other parts of the world have already made their home in the colony.

Although squatting, pure and simple, in Victoria, may not present the same advantages to the new comer as it did of yore, still, with a fair acquaintance with the treatment of sheep, a little capital, spirit and energy, and the faculty of adapting himself to circumstances, of learning new modes of life, and working hard and roughing it in the interior, there are still prizes to be won, fortunes to be made by the immigrant, who, with sobriety, prudence, and economy turns his attention in that direction.

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CHAPTER V.

MINING AND MINERALS.

THE history of Victoria is intimately and inseparably connected with gold mining. In fact, had there been no such thing as gold mining, the probabilities are that Victoria, as Victoria is, would never have existed. The discovery of gold in 1851 sent a thrill throughout the whole world, and Victoria was made.

The fame of the Californian mines had gone before, and to that *terra incognita* there was a rush; the fame of the wonderful gold-finds in Victoria followed, and thither, from all parts of the world, there was a stampede. Australia, before that event almost unheard of, except in the large centres of population, became at once invested with a strange weird romantic interest, and Melbourne, Ballarat, and Bendigo, names hitherto unknown, became as household words in every village and hamlet in Great Britain, and, to some extent, on the Continent.

In Australia itself the effect of the discovery of gold was marvellous. It changed, as in an instant, the whole fabric of commercial, industrial, and social life. In the course of a few months half the male population of the colony had left their legitimate occupations, and had gone hot-footed on the popular adventure in search of the dazzling metal. Workshops stood idle, business places were closed, ships lay empty at the wharves, trade was at a standstill, business was allowed to drift where it would; there was but one thing thought of, and that thing—Gold!

Speedily came the flood from the other colonies, and following that in hot haste, the vast influx from all parts of the world, crowd following crowd as fast as ships could bring them. And what wonder, when the reports of wonderful finds of fabulous amounts of gold, carefully propagated by the store and shanty keepers, and

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multiplied a hundredfold in the telling, came sharp and fast; one report "did tread upon another's heels, so fast they followed."

For a time, as might only be expected under such an exceptional state of things, society was disorganised. Dissipation and reckless waste was the rule, and robbery and even murder were not uncommon. But even in the worst times of the Victorian gold-fields, absolute lawlessness never prevailed. Those were times when each man's hand had to keep his head, but yet the good sense of the majority prevented the scenes of bloodshed and disregard of the laws of property and of human life which disgraced the earlier days of the Californian diggings.

Gold was known to exist in Victoria long prior to 1851, but owing to the jealousy of the Government of those days, who absolutely forbade its discovery being made known, and also to the little attention paid to it, no particular notice was taken, although men employed on some of the stations had casually picked it up and even sold it, and although a report went abroad in 1849 about a shepherd having found a large deposit in the neighbourhood of the Pyrenees mountains. The fact is, that in those early days, the attention of settlers was so concentrated on discovering new tracts of country for their ever increasing stock, that they cared little for aught else, even though it were picking up gold.

Although gold had been found at Clunes in March, 1850, a nugget of which was shown in a shop in Collins-street, it was not until August, 1851, that Mr. Hargreaves discovered it at Ballarat, and those diggings were first opened. Later in the year it was discovered at Mount Alexander (Castlemaine), Buninyong, and Fryer's-Creek, and then gold mining became an industry, or rather *the* industry of Victoria.

It is now estimated that at least one-third of the entire area of the colony is auriferous, and yet, even now, only a small portion of that area has been explored, and a still smaller portion, "exploitered;" and even with regard to the latter, science is still in doubt as to the depth to which the gold-bearing rocks extend, and as to the possibility or otherwise of discovering auriferous alluvious deposits at a lower level than the deepest of the deep leads already worked.

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Gold has been found in veins traversing granite, and diorite, in the granite itself, and detected in the planes of bedding of soft yellowish and reddish brown silurian claystone, and in sandstone. It occurs in bluish-white plastic silicates, in the veins with carbonate of lime, oxide of manganese, and carbonate of manganese, and, rarely, with sulphate of barytes. It has been got from the silurian, the mesozoic, and the miocene rocks, as well as from the pliocene deposits, and the soils derived from the breaking up of slates and sandstones. And since the pick and shovel of the miner have thus demolished so many of the ingenious hypotheses of closet philosophers, it is difficult to lay down any authoritative data as to where gold will not be found, hereafter, in a country so full of anomalies, and so splendidly endowed with mineral wealth as Victoria.

Gold-mining, as an industry, is divided into two well-known branches, called respectively alluvial, and quartz mining, the meaning of the two methods of obtaining gold being explained by the names. Alluvial mining, which, in the earlier days of the goldfields, constituted all the workings, consists of shovelling up from the surface, or from a depth below the surface, the earth supposed to contain particles of gold, and washing or puddling it. The process was simple, and is easily explained. The digger having put a sufficient quantity of gold-impregnated earth into his tub, added water, and stirred up the mass until it became of a mud-like consistency, when it was ready for cradling, which meant that it was emptied into a long box, having a sheet of iron full of small perforations at one end. Through this machine the earthy matter was passed, leaving the heavier particles of the gold mixed with "dirt" at the bottom. The "dirt" was then washed in a tin dish, an operation requiring skill and experience, until little or nothing was left in the dish except the pure gold. This process, which was called "shallow sinking," was followed by "sluicing," or washing the auriferous clays and gravels lying in low grounds, in artificially constructed channels of water. Not content with the gold found on or near the surface, the miners soon began to search still lower levels for gold impregnated earths, and here the precious metal was found in still

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greater abundance, and "deep-sinking" soon became a recognised and distinct form of mining. This process was carried on by sinking shafts from the surface to what was technically termed a "bottom," usually of pipeclay, or by tunnelling, running galleries obliquely from the sides of hills or sloping ground, in search of auriferous soils.

But deep-sinking was expensive, and hence arose the formation of companies with large capital, and gold-mining, instead of being a kind of desultory employment, to be put aside or resumed, at the will of the individual digger, became an institution, and a recognised and permanent branch of employment, involving capital and paid labour.

Quartz-mining soon followed. It was discovered that quartz was the matrix of gold, and that the gold which had been found lying loose in the earth, under the roots of trees, in the beds of creeks, and so on, was merely that which had been disintegrated from its parent rock and washed away by storms, &c. Quartz-mining consisted of boring into and blasting the solid quartz itself, taking out that portion which promised to be auriferous, and crushing it by means of machinery. The machinery necessary for the successful prosecution of this branch of gold-mining is of a simple yet ponderous and expensive character. The quartz brought up from the bowels of the earth is subjected in many cases to a process of roasting or burning, and then broken up into small pieces a little larger than ordinary road metal, is conveyed to the crushing-machine, which machine consists of a battery of four, six, eight, or more stampers, driven by steam-power. The stampers consist of upright iron rods, shod with heavy shoes, and rising and falling with regular motion, pounding the hardest quartz rock into powder. The stamp-heads or shoes work in an iron box, into which the quartz is shot, and which is kept supplied with a stream of water, so that the slush or quartz mud is carried off through a grating in front, while the gold, being heavier, sinks to the bottom. But gold in atomic particles is carried off in the muddy water, and to prevent the loss of this the water is caused to flow over a sloping board or platform, covered with a "blanket" of green baize or some other coarse material, which holds much of the gold, while its escape is further prevented by small grooves or ledges

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across the platform, charged with mercury, which lays hold of the particles of gold as they are washed down. The whole of the *debris* from the bottom of the box, from the blanket, which is rinsed in hot water, and from the gutters, is then placed in a vessel containing a quantity of mercury, and by a rotary or shaking motion, an amalgam of gold and mercury is formed. The amalgam is then placed in a chamois leather, which is squeezed until a considerable portion of the mercury oozes through it, and the remaining amalgam is put in a retort, when powerful heat causes the mercury to fly off through a pipe provided, while the pure gold remains in a cake at the bottom.

Other kinds of machinery have from time to time been invented for crushing the quartz, but the battery seems to have kept the field against all comers.

Bendigo, or Sandhurst, and Ballarat, were long known and celebrated as the head centres of the quartz reefs, but of late years they have had a formidable rival in Pleasant Creek, or Stawell, the head-quarters of deep sinking. For a long time the workings were comparatively shallow, that is to say they did not greatly exceed 300 or 400 feet in depth, and it is only about fourteen years since that attention was first called by Mr. R. B. Smyth, then Secretary for Mines for Victoria, to the fact that the yield of gold from parcels of quartz got from depths as great as 400 feet, was, on the average, 12 dwts. 8 grs. per ton, and not less than the average yield from depths ranging from 50 to 300 feet. Although he made this statement and bore it out by statistics, it was for a long time regarded with doubt and incredulity, and it was broadly stated more than once that the samples from the greater depths had been picked, and that deep sinking must result in loss.

As in the case when they declared that gold could only exist under such and such conditions, so the theorists were at fault with regard to the depths to which auriferous quartz extended. Their prognostications were, however, disregarded, and miners were not deterred from difficult and costly explorations, and the consequence has been that shafts have been sunk, and are still being sunk,

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and rich stone found at depths which, in the earlier days of gold-mining, were never contemplated, nor is there any diminution in the yield of gold in the deeper levels. There is one prospecting shaft at Stawell, at the Magdala mine, over 1700 feet in depth, but this has not yet struck gold-bearing quartz. In other claims which are being profitably worked in the same district, there are shafts one 1420 feet, one 1260 feet, and two others more than 1000 feet. From the deep levels in some mines the quartz has yielded as much as 3 ozs. per ton. At Clunes, the New North Clunes pumping shaft is over 1200 feet deep, with a level in the working shaft at 1012 feet, which has produced excellent golden quartz equal to the average obtained from the mine generally. At Sandhurst, one shaft is 900 feet deep, and there are four exceeding 800 feet, and one exceeding 700 feet. The yield from some of these deep mines, at the deepest levels, varies from 12 dwts. to 1 oz. per ton. The fact that rich quartz is raised every day from depths considerably below the level of the sea, is of great importance as regards our material interests, and of high scientific interest.

The colony is divided into seven mining districts, namely, Ballarat, Beechworth, Sandhurst, Maryborough, Castlemaine, Ararat, and Gipps Land. The number of distinct quartz reefs proved to be auriferous in 1876, was 3307, from which were raised 587,291 ozs. of gold, an average yield of 10 dwts. 13·48 grs. to the ton of quartz. The extent of auriferous alluvial and quartz ground worked on was 1134 square miles, and the estimated value of gold-mining claims and lands held under gold-mining leases, £5,745,590. The estimated quantity of gold taken from alluvial workings was 346,933 ozs.; the total yield, alluvial and quartz, being 934,224 ozs.—the smallest return for the last eleven years, that of 1865 being 1,095,787 ozs. The largest return for any one year was for 1868, when 1,657,498 ozs. were raised. The mining population showed a total of 41,010 miners, being a falling-off of 707 from the previous year. The largest number of miners employed was in 1866, when there were 70,794 on the various gold-fields of the colony. Of the 41,010 miners employed in 1876, 29,843 were Europeans, 11,167 Chinese; 14,446 being engaged in quartz, and 26,558 in alluvial mining. The machinery employed

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on the gold-fields in 1876, was as follows:—Alluvial—steam engines, 289, having an aggregate horse-power of 7858; puddling machines, 1143; buddles, 7; whims, 210; whips or pulleys, 245; sluices, toms, and sluice-boxes, 15,321; hydraulic hoses, 36; pumps, 591; water-wheels, 216; quicksilver and compound cradles, 166; stamp-heads (crushing cement), 448; boring machines, 16. Quartz mining—steam engines, 792, of an aggregate of 16,089 horse-power; crushing machines, driven by other power than steam, 66; stamp-heads (crushing quartz or other vein-stuff), 6356; buddles, 54; winding, washing, pumping, and other machines, moved by water power, 8; whims, 560; whips or pulleys, 489; boring machines, used in blasting, 5. The approximate value of all mining plant (alluvial and quartz), for the year was £1,989,500, as against £2,033,629 of the previous year.

In fact, the statistics for the last few years show conclusively that both with regard to the number of claims worked on, the area of mining country, the gold obtained, the miners employed, and the machinery used, there has been a gradual diminution, in consequence, perhaps, of the large number of men formerly engaged on the gold-fields who have taken up homesteads under the Land Act of 1869. Still, it is estimated that a considerable increase has taken place in the quantity of gold raised in proportion to the number of hands employed in getting it, for while in 1873 the average per man was £93 16s. 2d., and 1874, £99 8s. 3d., it was in 1875, £104 4s. 4d.; and, in 1876, as is estimated, a little less than that. The quantity of Victorian gold received at the Royal Mint, Melbourne, for 1876, was 427,879 ozs. being 1,312,732 ozs. since the opening of the mint.

Although, as a rule, gold is found in small particles, still there have been numerous examples of large pieces (nuggets) being picked up by lucky miners. Of these, the "Welcome," found at Bakery Hill, Ballarat, was the largest. It weighed 2195 ozs., and was sold in Melbourne for £9325. The "Welcome Stranger" was found near Dunolly, and, when melted, yielded gold to the value of £9534; the "Blanche Barkly," found at Kingower, was of the value of £6905 12s. 9d. A nugget, unnamed, found in Canadian Gully,

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was of the value of £5532 7s. 4d. The "Heron," found near Mount Alexander, was sold in England for £4080. The "Lady Hotham," found near Canadian Gully, was valued at £3000; the "Victoria" and the "Dascombe," found at Bendigo, were respectively valued at £1650 and £1500; the "Nil Desperandum," found at Ballarat, was sold for £1050; the "Precious," found at Berlin, weighed 1621 oz.; the "Viscount Canterbury" and the "Viscountess Canterbury," also found at Berlin, weighed respectively 1105 ozs. and 884 ozs., and many others; nearly 200 nuggets of the value of from £60 to £2000 each having been known to have been found in the district of Dunolly, and about 350 of the value of from £4 to £1500 each at the Berlin diggings near Kingower.

What are the prospects of miners in Victoria? Notwithstanding the undoubted falling-off in the industry of late years, they are as bright as ever they were. Gold-mining is no longer the wild unsettled pursuit it was in the olden days, when it might more aptly have been called gold-hunting. It has become a defined calling, and men now embark in it as they would in any other settled business. There is now little of the fevered excitement of the early time, large and lucky finds are not so common, and men look forward, not to those brilliant *coups* by which fortunes were made at once, but to a permanent and steady income to be derived from their labour. It may be worth while for those who have an inclination to try Victoria as a field for their future exertions, and who think of gold-mining as a calling, to consider that, in a country of such wide extent, it is hardly possible that the principal beds of gold should have been all discovered within a few years from the date of gold-mining. It is an admitted fact that the presence of gold is traceable in small quantities throughout a large portion of the colony. Predictions of the failure of the goldfields seem as far from verification as when they were made with regard to the giving out of the superficial alluvial deposits twenty-five years since. It was prophesied, at the time that the working in quartz veins commenced, that they could never be payable at a greater depth than sixty or seventy feet, and yet the deep sinkings at Stawell, Clunes, Bendigo, Ballarat, and other places, have abundantly proved the fallacy of such statements.

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In short, capital, labour, and perseverance will make many a mine yield gold which has hitherto been profitless, and will open many and many a wide area of country that has never yet been fairly tested—country that, for aught we know, may contain as rich or richer ore, waiting for the enterprising digger, as any that ever yielded treasure in the halcyon days of gold-mining

The rates of wages paid for different descriptions of mining labour are as follows:—General manager, £3 to £12 per week, without rations; legal manager, £1 to £6; mining manager, £2 10s. to £5; engineer, £2 5s. to £5; engine-driver, £2 2s. to £3 10s.; pitman, £2 to £2 15s.; blacksmith, £2 2s. to £3 10s.; carpenter, £2 2s. to £3 12s.; foreman of shaft, £2 2s. to £3 10s.; miner, £2 to £3; surface man (labourers), £1 10s. to £3; boy, 10s. to £2; Chinese, 12s. 6d. to £2.

But Victoria contains other minerals as well as gold. On the 31st December, 1876, the following leases, and the areas of land occupied by them, were in force:—For antimony, 18 leases, 351a. 1r. 27p.; argentiferous galena, 1 lease, 154a. 1r. 32p.; coal, 10 leases, 4956a. 3r. 7p.; coal, shale, or lignite, 1 lease, 640a.; copper and ores of copper, 2 leases, 872a. 3r. 13p.; flagging, 1 lease, 9a. 2r. 30p.; lignite, 1 lease, 475a. 2r. 10p.; silver, 2 leases, 370a. 1r. 16p.; silver, lead, and copper, 1 lease, 561a. 2r. 21p.; slate, 1 lease, 49a. 3r. 39p.; slate and flagging, 2 leases, 19a. 2r. 25p.; ironstone, 1 lease, 320a. 1r. 35p.; red ochre clay, 1 lease, 2a. 0r. 14p.; tin and iron, 1 lease, 51a. 1r. 39p.; tin and the ores of tin, 8 leases, 1076a. 0r. 6p.; total, 51 leases, covering an area of 9912a. 1r. 34p. According to the estimate of the Mining Department, the values of the minerals, other than gold, raised in Victoria from 1851 to the end of 1875 were—Silver, £14,617; tin, £333,870; copper, £8331; antimony, £104,865; lead, £4700; iron, £2101; coal, £8233; lignite, £2172; kaolin, £7444; flagging, £37,961; slates, £940; magnesite, £12; diamonds, £107; sapphires, £575; total, £525,928, of which £35,452 was the value of those raised in 1875. Thus, it seems that there are other mineral industries in the colony waiting only for development, for the truth is, that none of those named have been much more than experiments, and certainly have not been carried on with that amount of enterprise which the magnitude of the interests deserved.

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In 1860, the casual discovery of a crystal of sapphire, in the gizzard of a wild duck, turned the attention of the Rev. Dr. Bleasdale, a well-known mineralogist, to the subject of precious stones; and since then he has successfuly prosecuted his investigations in this branch of mineralogy; and his discoveries have amply rewarded his studies. At first it was thought rare to find a crystal of corundum, but, after a while, it became quite common. In at least five different localities, a long way asunder, fine specimens of this class of gems have been unearthed. In three of these the original matrix of the precious corundum (sapphires), has been discovered—the old red basalt at its overlap on the granite—at Gembrook, 45 miles east from Melbourne; Comaidai, 40 west, and near Glen Lyon, in the Jim Crow ranges, about 75 miles.

In each of these localities the crystals were perfect, and utterly free from abrasion, or water-wearing, and in that at Gembrook, a very considerable quantity were found as free from abrasion as if crystals had been broken into splinters by the hand. The collection from Gembrook comprises the following, all being gems of fine quality and many of fair size which have been wrought for ring and pin stones, viz:—sapphires, asterias, blue, dark-red, and greenish, oriental aquamarine, oriental amethyst, oriental topaz and beautiful small crystals of ruby. In addition to the above, two of the mines, Donnelly's Creek (Gippsland) and Glen Lyon, have yielded specimens of green corundum (the oriental emerald) of good size, and great beauty. Two have been wrought, one now being of 6 carats, and the other 5½, both faultless gems. Diamonds of more than 4 carats weight and good colour have been found near Beechworth, associated with stream tin and the pale blue topaz, in streams running through granite gullies, notably the Woolshed Creek. Spinels of good colour but small; topazes, blue, white, and of a pinkish colour, are common on gold workings near granite and old-basalt-hills; as also are zircons, and hyacinths. Of each of these kinds many superb specimens have been wrought. Opals, both the noble and the fire-opal, occur at Beechworth. Garnets of the almondine tint alone have been reported in Victoria, and are plentiful, though generally small in the granite regions. Beryls, whether emerald or aquamarine,

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have not yet occurred, but some good chrysoberyls came from near Donnelly's Creek, Gippsland. Sard, and sardonyx, chalcedony, chrysoprase, and agates in great variety, have been discovered on most of the alluvial diggings. Rock-crystal, cairngorms, amethysts, and all descriptions of jaspers of the finest quality, being in the estimation of seal-cutters quite equal to Egyptian, with quartzites and plum-pudding stones, are common about Beechworth, Mount Blackwood and the Blue Mountain diggings.

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CHAPTER VI.

MANUFACTURES, TRADES, AND INDUSTRIES.

UNTIL the last few years little was known or thought of the manufactures of Victoria, and in the face of the importations of manufactured goods of all kinds from England, America, and other countries, where the manufactories of those goods were established, and where the goods could be produced at the minimum rate, much cheaper, as it was thought, than they could possibly be in the colony, in consequence of the difference in the price of labour, it was accepted as a conclusion that, although certain trades, such as carpentry, painting, smith's work, masonry, building, &c., which were absolutely necessary to be carried on in the colony, as well as those providing the necessaries of life, such as baking, butchering, &c., might and would flourish so long as the colony were prosperous, still, that manufactories, strictly such, of goods which could be exported from other countries, could not possibly pay. Time has, however, shown that not only can goods be manufactured here to compete with those from home, but that actually, in many cases, the colonially made goods have to a large extent driven the imported ones from the market. It does not come within the scope or purpose of a work like this to follow the question out in its political aspect, which would involve entering into the vexed question of protection *versus* free trade, further than to say that the system under which the Government is now carried on is a moderate protectionist one, customs duties being levied on such goods as can be produced in the colonies, and on articles of luxury, while other goods and the necessaries of life are practically free. The highest duty levied in any case, except upon wines, spirits, and tobacco, is 20 per cent. on the declared value at the place from which it is exported.

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The numerous industries which now exist in Victoria, and which are firmly established in almost all her large towns, had very small beginnings, and had many difficulties to contend with at starting, not the least being the prejudice against them in the public mind; in fact, for a long time it was looked upon as a kind of reproach to say that any article was of colonial make, even as now, amongst a certain class, it is deemed unfashionable to admire, or even to acknowledge the merit of anything that does not bear, as they say, the London Hall mark. Yet, with the drawback of having to contend with these difficulties, nay, in spite of them, they have made such head way that the colony is now no longer dependent on foreign markets for any of her articles of everyday use. Capital is extensively invested at satisfactorily remunerative interest, and artizans who are willing to work can find abundance of employment at good wages; in fact, a great hindrance to the further development of these industries is the difficulty of getting a sufficiency of competent hands.

The principal industries which afford employment for large numbers of workpeople, are as follows:—

Boot and Shoe Factories.—These establishments have rapidly sprung into a most important position, and are carried on in most of the large towns of the colony. They employ large numbers of hands, men, women, and boys, and machinery of the latest designs is used extensively in the various operations of cutting, rivetting, pegging, and sewing. The employment is healthy, as by the use of machinery the consequent stooping and consequent compression of the chest attendant on the making of hand-made goods is avoided. Against forty-six of these establishments at work on the 31st March, 1876, there were on the same date in 1877 no fewer than sixty-seven, employing 1831 males and 433 females, and using eight steam-engines of an aggregate of fifty-one horse-power, and fifty-nine hand machines, the value of the plant and machinery being £22,727; of the lands, £33,810; and of the buildings, £36,835. Wages are—Wellingtons, 10s.; elastics, 7s. 6d.; closing, 8s.

Clothing factories employ a still greater number of hands, principally females, the numbers being 788 males and 3029 females. Of these factories there are fifty-three in the colony, using one steam-

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engine of eight-horse power, and fifty-two hand machines—not including sewing-machines; the machinery and plant is valued at £13,977, the lands at £58,925, and the buildings at £67,385. In these establishments the various articles of male and female clothing are made up, and as there is a continual demand for labour the wages of the *employés* are good. (For rates of wages of tradesmen, &c., see article on "Employment, Wages, &c.," Chapter IX.) The rapidity with which these establishments are springing up of late warrants the assumption that ere long the inferior class of shoddy goods from the home factories will be entirely driven from the market.

Saddlery and harness making is an industry of comparatively recent formation in the colony, inasmuch as until lately nearly all the goods of this class were imported. There are now, however, twenty-nine saddlery and harness manufactories in the colony, employing 323 males and 14 females, besides two saddle-tree, three saddlers' ironmongery and coach-spring, and five whip manufactories, which employ seventy-six males and five females. All kinds of goods appertaining to this line of business are now made in the colony, and while quite equal to the imported can be purchased at a lower price, so that it is not unlikely that ere long importation, except of certain special articles, will practically cease.

Of hat and cap manufactories there are twenty-two as against fifteen of last year, emploing 145 males and 97 females.

Coach, waggon, &c., manufactories are also on the increase, there being 116 against 105 of last year. These employ nine steam-engines and 105 hand-engines, of an aggregate of 105 horse-power, and 1358 males and 14 female hands, the value of the machinery and plant being £52,896, of the land £68,605, and of the buildings £58,415. All classes of work, from the most elaborately finished and handsomely decorated carriages to the strongest drays and lorries, are turned out. Besides the factories themselves, there are separate establishments for the making of carriage materials, such as springs, patent axles and hubs, spokes, felloes, and shafts. Many of the vehicles manufactured in Victoria, shown at the various Exhibitions, have been greatly admired, and could not be excelled for workmanship and finish by anything ever imported.

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Cabinet works number twenty-six, employing 438 males and twelve females; and bedding and upholstery manufactories, of which there are eleven more, employing 177 males and thirty-two females, are divided into various branches, all of which are prospering.

Of saw-mills, including moulding, framing, and turning mills, there are 159, with 152 steam-engines of an aggregate of 840 horse-power. These are kept in constant work; and carpentry, which has extended to making doors, sashes, weatherboards, and the like, formerly imported from England and America, has made rapid strides.

Iron and tin works number 53, employing 677 males and 7 females, and iron, brass, and copper foundries, of which there are 77, employ 1556 males. The value of plant and machinery used in these industries amounts to £166,141, and of the lands and buildings is very large. Rolling mills are doing well, and boiler making has rapidly extended, and has altogether stopped importation.

Agricultural implement manufactories number 46, employing 838 males, and 3 females. This industry is rapidly increasing, as the machines made in Victoria are far better adapted to the requirements of the local farmers than anything which can be obtained from abroad.

Of fellmongeries and woolwashing establishments there are 52, employing 900 males and 13 females.

Other manufactories are numerous, and may be thus classified:—Account-book manufactories, and manufacturing stationers, 16; hands employed, 607. Printing establishments, 33; males, 1424; females, 42; hands employed, 1468. Organ building establishments, 2; hands, 16. Pianoforte manufacturers, 7; hands, 21. Picture-frame makers, 6; hands, 25. Carving and gilding establishments, 5; hands, 28. India-rubber stamp manufactories, 3; hands, 8. Modelling works, 3; hands, 9. Statuary works, 1; hands, 3. Wood carving works, 1. Wooden pipe manufactories, 2; hands, 6. Die-sinkers, engravers, medallists, trade-mark makers, 5; hands, 25. Philosophical instrument makers, 2; hands, 6. Surgical instrument and truss manufactories, 5; hands, 12. Blasting-powder, dynamite, &c., manufactories, 3; hands, 51. Fuze manufactories, 1; hands, 16.

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Gunmakers, 4; hands, 13. Cutlery, machine tool manufactories, 7; hands, 21. Engine, machine manufactories, 53; employing 1064 males. Graving docks, 3; hands, 94. Patent slips, 4; hands, 90. Lime works, 24; hands, 152. Looking-glass manufactories, 5; hands, 42. Chemical works, 5; hands, 52. Die works, 14; hands, 80. Essential oil manufactories, 5; hands, 26. Ink, blacking, &c., manufactories, 8; hands, 103. Paint, varnish manufactories, 2; hands, 16. Salt works, 5; hands, 27. Tar distilling, asphalte works, 3; hands, 24. Fur manufactories, 3; hands, 11. Waterproof manufactories, 2; hands, 20. Umbrella and parasol manufactories, 7; hands, 25. Jute factories, 1; hands, 166. Rope, twine works, 13; hands, 336. Cheese factories, 25; hands, 117. Meat curing establishments, 15; hands, 402. Biscuit manufactories, 7; hands, 286. Confectionary works, 8; hands, 170. Jam manufactories, 8; hands, 167. Maizena, starch, &c., manufactories, 3; hands, 16. Ærated waters, &c., works, 114; employing 579 males and 30 females. Coffee, chocolate, spice, &c., works, 10; hands, 108. Distilleries, 6; hands, 49. Malthouses, 13; hands, 50. Sauce, pickle, &c., manufactories, 3; hands, 30. Sugar refineries, 2; hands, 190. Tobacco, cigar, snuff manufactories, 13; hands, 653. Vinegar works, 5; hands, 34. Boiling-down establishments, 19; hands, 89. Bone-cutting mills, and bone manure manufactories, 16; hands, 91. Brush manufactories, 6; hands, 138. Curled hair manufactories, 3; hands, 16. Flock manufactories, 3; hands, 17. Glue, oil manufactories, 8; hands, 36. Morocco, fancy leather manufactories, 2; hands, 6. Portmanteau, trunk manufactories, 7; hands, 38. Soap, candle, tallow works, 42; employing 440 males and 11 females. Bark mills, 4; hands, 21. Basket making works, 9; hands, 40. Window-blind manufactories, 10; hands, 86. Broom manufactories, 2; hands, 25. Chaff-cutting, corn-crushing works, 187; employing 582 males and 16 females. Cooperages, 19; hands, 102. Fancy box manufactories, 2; hands, 27. Hat-box manufactories, 2; hands, 8. Paper manufactories, 1; hands, 131. Paper-bag manufactories, 6; hands, 142. Gasworks, 15; hands, 377. Glass manufactories, 4; hands, 55. Glass works, 4; hands, 21. Filter manufactories, 2; hands, 6. Marble works, 19; hands, 164. Stone-breaking works, 5; hands, 76. Stone-

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sawing, polishing works, 4; hands, 90. Ice manufactories, 3; hands, 19. Electro-plating and gilding works, 4; hands, 35. Goldsmiths and Jewellers (manufacturing), 19; hands, 370. Lapidaries, 1; hands, 2. Antimony smelting works, 5; hands, 95. Lead works, 1; hands, 12. Tin smelting works, 1; hands, 3. Wire-working establishments, 6; hands, 35. Ship and boat-builders, 19; hands, 88.

Besides these there are numerous other industries too small in their number to call for special notice, all those mentioned being works of an extensive character, and places being merely shops, or being on a limited scale, not being included. The totals are—Manufactories, 2302, including flour mills, breweries, tanneries, brick yards, and potteries, against 2241 of the previous year. Of these latter there are flour mills and mills for dressing grain, 152, with 138 steam and 13 water engines of an aggregate of 2811 horsepower, which operated on 5,159,850 bushels of wheat and 309,839 bushels of other grain during the year; hands employed, 707. Breweries, 102, employing 902 hands and 633 horses; beer made during the year, 14,236,529 gallons. Woollen mills, 8, employing 428 males and 145 females, and making 719,887 yards of tweed, cloth and flannel, 2816 pairs blankets, and 2941 shawls during the year. Tanneries, 96, employing 1140 hands, and tanning 1,310,229 skins and 323,693 hides during the year. Brick yards and potteries, 241, employing 1194 hands, and making 75,081,000 bricks during the year; and stone quarries, 155, employing 808 hands. Total employed in manufactories, works, &c., 22,033 males and 4792 females.

From these statistics it will be seen that Victoria, as a manufacturing colony, is in a flourishing condition, and it is also to be noticed that there is ample room for an extension of the existing and an opening up of new industries. No artisan need fear that he will not obtain employment at remunerative wages, and as an outlet for the overcrowded cities of Europe, where men are suffering from the keen competition which ensues on too little work for the many workers, she opens a vast and comparatively untrodden field of enterprise as a land where there is indeed "bread and work for all."

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CHAPTER VII.

TRADE AND COMMERCE, SHIPPING, ETC.

FROM a very small beginning the trade and commerce of Victoria has, during the comparatively short existence of the colony, grown into gigantic proportions, and the importance of the interchange, inter-colonial and international, may be easily understood by the elaborate and exhaustive statistics and customs returns regularly published for the information of the public. The port of Melbourne is continually crowded with shipping of every class and tonnage, steamers and sailing vessels, from the small coaster to the huge cargo, passenger, and mail-carrying ocean-going steamers of 3000 to 4000 tons burthen. Besides the port named there are also the smaller sea ports of Geelong, Portland, Port Fairy, Port Albert, and Warrnambool, and the Murray river ports of Echuca, Swan Hill, Tocumwal, Wahgunyah, Wodonga, and Howlong, all of which are regularly visited by vessels of larger and smaller size.

At first, and for many years after the settlement of the colony, the entire commerce of Victoria was transacted by way of Great Britain, but as the imports and exports grew in magnitude and importance, so the merchants and shipowners laid on their vessels direct to the foreign ports with which they were transacting business. Thus, in addition to the enormous English trade, there are vessels continually sailing between the Victorian ports and India, China, Mauritius, America, France, Germany, Sweden, and other places, wherever the requirements or exigencies of traffic demand.

The principal port of Victoria is the metropolis, Melbourne, or rather Melbourne, Sandridge, and Williamstown, which may be generally classified under the one term. At this port the imports for 1875 amounted to £13,015,552, or 78 per cent. of the total imports for the year, and the exports to £13,126,292, or 88·89 per cent.

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The port at which, after Melbourne, the value of the goods imported is greatest, is Echuca, the principal port on the Murray, and customs port for the overland trade with New South Wales. At this place the value of the imports was £2,189,562, or 13·12 per cent., and here and at the other ports on the Murray, nearly one-fifth of the total imports for the year were delivered. Except Melbourne, the only very important sea port for foreign trade is Geelong, which imported during 1875 goods to the value of £211,029, exporting to the value of £1,192,750 in the same year. Besides the foreign trade, however, there exists a coastwise traffic, by means of which the outports receive goods of which the duty has been paid in Melbourne, and send away goods to Melbourne for ultimate shipping there. The principal items of these coastwise exports is wool, of which Warrnambool sent away 1,390,330 lbs., valued at £140,884; Port Fairy and Belfast, 2,289,207 lbs., valued at £229,258; and Portland, 2,440,661 lbs., valued at £196,325—a total value of £566,467 for wool exported. The other articles shipped in these ports are principally grain, cheese, leather, live stock, potatoes, bark and skins, of which the total value for the year was £189,615, bringing up the total export value from the south-west coast to £756,082.

The total value of the imports and exports for the year 1875 was as follows :—Imports, £16,685,874; exports, £14,766,974; the excess of imports over exports being £1,918,900; and the total value of the external trade thus being £31,452,848; being £268,111 less imports, and £674,135 less exports than the previous year.

Of the imports, the quantity of breadstuffs (wheat, flour, bread, and biscuits), was 284,605 bushels, valued at £71,137; and of the exports—wool, 85,064,952 lbs., valued at £6,096,958; tallow, 13,910,736 lbs., valued at £203,243; hides and skins, valued at £50,454; and breadstuffs, 84,236 bushels, valued at £36,076.

The value of the imports and exports per head of the population (815,034), was—imports, £20 9s. 6d.; exports, £18 2s. 4d.; or both, £38 11s. 10d.

The value of the imports of articles, entered as being the produce or manufacture of the United Kingdom, of other British dominions, and of Foreign states, and the value of the exports of articles entered as

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being the produce or manufacture of the same countries and of Victoria, will be found as under :—Articles, the produce or manufacture of Victoria—exports, £10,571,806 ; the United Kingdom—imports, £7,528,092; exports, £1,349,032 ; other British possessions—imports, £6,324,571 ; exports, £2,108,328 ; Foreign states—imports, £2,833,211; exports, £737,808. The exports of the articles of produce or manufacture of Victoria are set down at about 71 per cent. of the whole.

The country from which, next to Great Britain, Victoria imports most largely, is the neighbouring colony of New South Wales, the principal articles being, in 1875—wool, £2,264,676; horned cattle, £573,224; sheep, £473,044; coal, £258,645; and maize, £113,675. The imports from "other Foreign states," consisted principally of tea from China, £630,922, and sugar from Java, £258,553.

The external trade of Victoria, as shown by the imports and exports, is larger than New South Wales and Queensland combined. or is larger than Queensland, South Australia, Western Australia, Tasmania, and New Zealand combined. It must, however, not be forgotten that in the Victorian imports from the other colonies wool is represented by a value of £2,310,477, and gold by a value of £869,416, and there is no doubt that most of this is afterwards included in the Victorian exports.

The Customs revenue for 1875, as compared with 1874, shows a falling-off of £84,003, the receipts being £1,764,209 in 1875 and £1,848,212 in 1874. Pilotage rates, not included in the customs revenue, amounted to £21,463 in 1875.

The shipping interest of Victoria is represented by a fleet of vessels of all tonnages, from the small lime and firewood ketches trading between Melbourne, Geelong, Western Port, and other short distances, to sailing vessels of considerable tonnage—brig, barque, and even ship rigged, and the numerous fleet of fine coasting and intercolonial steamers. The latter vessels especially are of a high class, and those trading with New South Wales and New Zealand especially are mostly splendid specimens of naval architecture—well manned, kept in excellent order, well found, roomy, and comfortable, swift, and fit for any weather. Those trading to the other colonies are generally smaller vessels, but are equally comfortable, while the

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coasting steamers are eminently suited to the requirements of the trade. In brief, the mercantile navy of Victoria is such an one as might reflect credit on any of the older states of Europe, no expense having been spared to obtain vessels of the best class that science could design and skill create.

The tonnage of vessels entering and leaving Victorian ports, and the number of men employed to navigate such vessels, were greater in the year 1875 than in three previous years. The number of vessels inwards, however, was slightly exceeded in one, and the number outwards in two, of those years.

The vessels inward in 1875 numbered 2171; the tonnage, 840,386, and the number of men was 38,681. The vessels outward, 2223; tonnage, 833,499; and number of men, 38,454. Of these inward vessels, 1781, with a tonnage of 483,880 and 25,679 men, were colonial; 296, with a tonnage of 297,127 and 11,708 men, British; and 94, tonnage 59,379 and 1294 men, foreign. Of the outward, 1869 vessels, tonnage 505,691, men 26,442, were colonial; 268, tonnage 274,245, men 10,856, British; and 86, tonnage 53,563 and 1153 men, foreign. The foreign vessels were of the following nationalities, in the order of their number, visiting the ports:—American, French, German, Norwegian, Dutch, Swedish, Hawaiian, Russian, Danish, Spanish, and Nicaraguan.

The colonial vessels had 1 man to 19 tons, the British 1 to 21 tons, and the foreign 1 to 46 tons. By this it is seen that the colonial vessels are, numerically, the best manned, and foreign vessels the worst. It must be remembered, however, that most of the colonial vessels, and many of the British vessels, are steamers, whilst nearly all the foreign vessels are sailing vessels; and as steamers must have one crew to attend to the engines and another to the sails and cargo, they necessarily carry more hands in the aggregate than sailing vessels.

In 1875 the vessels arriving in ballast numbered 64, with an aggregate tonnage of 6379 tons. Those outward numbered 728, with an aggregate of 234,172 tons.

Owing to the large amount of shipping engaged in the coal trade of New South Wales, the number and tonnage of vessels entered and

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cleared in that colony are in excess of the number and tonnage of those entered and cleared in Victoria. With this exception, however, the shipping coming in and departing from Victorian ports is much greater, both in regard to numbers and tonnage, than that of any other colony in the group.

The only vessels built in Victoria have, as yet, been small craft. In the year 1875, of such were launched 24, comprising 9 steamers and 15 sailing vessels, viz., 1 barge, 8 cutters, and 6 schooners. The aggregate tonnage of the steamers was 1406, or an average of 156 to each vessel. The vessels on the register at the end of 1875 numbered 458, viz., 61 steamers and 397 sailing vessels. The former, in the aggregate, measured 12,656 tons, and carried 865 men; the latter measured 61,228 tons, and carried 2564 men. The number of lighters licensed to carry goods was 133. The number of licensed boats was 323, of which 2 were to be employed in whaling, 9 in oyster fishing, and 312 in the conveyance of passengers, &c.

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CHAPTER VIII.

RAILWAYS, ROADS, COACHES, POSTAL, TELEGRAPHIC, etc.

Not many years ago the means of communication between one part of the colony and another, were of the most primitive description. The roads were, for the most part, little more than bush tracks, cut through the timber, and made to the extent that they were made by rocks and fallen trees being shot into the bad places, and the rest left to take its chance. Deep beds of thick choking dust in summer, and horrible quagmires of thick mud and slush in winter, travelling over them was an undertaking not lightly to be entered upon, and only performed at risk of life and limb. That they were traversed it is true, either by the lumbering bullock drays of the period, when main strength was the only means of overcoming the difficulties, or by the world-renowned "Cobb's coaches," whose drivers, reckless of danger, and regardless of horseflesh, forced their way, sometimes on the road, sometimes off it, from one point to another. No sooner did a new diggings break out, no sooner did a new township spring up, than the ubiquitous Cobb was there with his teams of half-broken horses, and his leathern-hung waggon-coaches. And so for years the country was opened up for traffic, and traversed from end to end, while cabs and omnibuses became general in the city and towns of the interior.

But the change soon came. The advantages of railway communication were too well known, and too much appreciated by the enterprising colonists for them to be long satisfied without them, and railways soon wound their way over hill and plain from the metropolis, north, east, and west. The number of miles of railway now open in the colony is about 950—namely, the Melbourne, Sandhurst, and Echuca line, which taps the Murray River at the latter place, 156 miles;

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Melbourne and Williamstown, 9¼ miles; Melbourne, Geelong, and Ballarat, 100¼ miles; Ballarat and Ararat, 57 miles; Ararat and Stawell, 18¾ miles; Ararat and Hamilton, 66½ miles; Hamilton and Portland, 55 miles; North-Eastern line, from Melbourne to the Murray at Wodonga (Albury), 187 miles; Ballarat and Maryborough, 42½ miles; Castlemaine and Dunolly, 47½ miles; Wangaratta and Beechworth, 26½ miles; Sandhurst and Inglewood, 30¼ miles; Maryborough and Avoca, 15 miles; and Geelong and Colac, 51 miles. These are Government railways, and besides them the Government has also in progress the Melbourne and Gipps Land line (120 miles), and some others under consideration. There are also the following private lines belonging to a company known as the Melbourne and Hobson's Bay Railway Company:—Melbourne and St Kilda, 3¾ miles; Melbourne and Sandridge, 2½ miles; Melbourne and Windsor, 3½ miles; Windsor and Brighton, 5¼ miles; and Richmond and Hawthorn, 2 miles. It will thus be seen that the colony is partially covered with a network of railway which, with the improvements which have been made in the roads, render modern travelling not only easy, but pleasant to any part of the country. The total cost of the Government lines, as stated at the end of 1876, for 1875 was £12,223,100, or an average of £21,540 per mile, the average distance travelled during the year 1875 being 2,051,910 miles. The total coast of the private lines was £865,412, or £50,907 per mile, the distance travelled being 451,128 miles.

The whole of the lines are constructed on a gauge of 5 feet 3 inches, which is also the national guage of South Australia, but not of any of the other colonies, where a narrower gauge has been adopted. The permanent way on the whole of the railways is of the best description, the ballast consisting principally of blue-metal (basalt) spalls, bound together with sand, loam and gravel, and making a roadway practically devoid of shrinkage and sinking. Unlike the railways of other colonies, those of Victoria have had no very great engineering difficulties to overcome, they run for the most part over tolerably level country, and with a few exceptions there are no marked ascents or descents. The gradients too are easy and gradual, and the curves have a long radius, so that with common care and

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attention, travelling by rail is unattended with the slightest danger. In fact, accidents from running on the lines are so uncommon as to be almost unknown, and the baton system having been introduced on the Government railways, is an additional safeguard. The rails are of the best quality, and are firmly fixed to red-gum sleepers, the very best timber that can be obtained for the purpose.

The rolling stock on the Government lines consists of 121 locomotives, 96 first-class and composite carriages, 87 second-class carriages, 175 sheep and cattle trucks, 1678 goods trucks, wagons, &c., and 149 guards' vans and other vehicles, the total cost being £948,206. On the private lines the rolling stock consists of 16 locomotives, 77 first-class and composite carriages, 15 second-class carriages, 202 goods trucks, wagons, &c., and 12 guards' vans and other vehicles, the total cost being £137,830, a grand total for the two classes of railway of £1,086,036 for rolling stock. It may be added that the carriages are roomy and comfortable, and that on the Government lines a number of saloon carriages have been introduced, and appear to have given much satisfaction to travellers. The main terminus of the Government line is in Spencer-street, at the west end of Melbourne, and is an extensive range of wooden buildings, containing all conveniences for passengers and for the large goods traffic carried on. The other termini and the intermediate stations are also roomy, and fitted with all requirements. The same may also be said of the termini and stations on the private lines.

Passenger rates for travelling on the Government lines are—First-class, 2d. per mile; second-class, 1½d.; and on the private lines—First-class, 1½d.; second-class, 1½d.; there being a slight reduction on the latter lines for return tickets, the rates being still further reduced on them to regular travellers by means of monthly tickets. The number of passengers carried on the Government lines for 1875 was 2,699,519, and on the private lines 3,465,557½, a total of 6,165,076½, and an increase of 790,235 over the previous year. The goods carried amounted, on the Government lines, to 732,772 tons, and on the private lines to 206,674 tons—a total of 939,446 tons, being an increase on the Government lines of 51,062 tons, and a de-

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crease on the private lines of 16,286 tons, as compared with the previous year.

The receipts for the year were—on the Government lines, £920,008, and the working expenses £481,717; on the private lines the receipts were £171,930, and the working expenses £89,761.

The main roads and bridges of the colony are constructed by the general Government out of a fund voted by Parliament for the prosecution of public works. The construction and repair of the streets and roads in the towns and municipalities devolve on the corporations of those places, and on what are called road boards, who have the power of levying local taxation for those purposes. The amount expended during the year on roads and bridges was £99,451; a total of £6,773,817 since the year 1851. As a rule, the principal roads are well made and kept in good order, although many of the cross roads are rugged and uneven, and difficult and dangerous, if not altogether impassable, in bad weather. This arises, in many cases, from the character of the country through which they pass; and although very much has been and is being done to them, much more remains to be done. Still, such as they are, they are largely used for traffic, though some of the main lines of road have been to a great extent deserted from the fact of railways touching the principal towns and villages they connect. Communication by rail or coach is, however, easy between every part of the colony, for at each of the principal centres of population coaches running daily or twice or thrice a week branch off in every direction, and there is no difficulty in reaching the most remote part of Victoria by coach or mail car, or even the smallest and most unfrequented hamlet, station, or settlement by means of the coach and a short drive by hired conveyance or ride on horseback.

The postal arrangements in the colony are very complete, and the facilities for communication by letter are as perfect as they can be made, neither trouble nor expense being spared for the safe and prompt conveyance of letters, not only to all parts of the colony, but to all parts of the world. The rates of postage are low, the charge for a single letter (half-ounce) to any part of the colony, or any part of the other Australian colonies, being 2d. prepaid by stamp and not

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otherwise. Letters are forwarded by the earliest and quickest means, rail as far as possible, and coach or horse otherwise, as frequently as is necessary or convenient, and even the most remote corners of the colony are rarely outside of two days' communication. Post-offices, of which there are no fewer than 900, are established in every township, village, diggings, and agricultural settlement, and in the large towns post-pillars for the reception of letters and newspapers are established in convenient places, and cleared several times each day. In Melbourne, Ballarat, and other important towns, there are three or four deliveries per day, with occasional additional deliveries when rendered necessary by the arrival of the English mail. An additional facility is offered to the public by the adoption of the postal card system, by which short messages, not intended to be private, can be forwarded by the usual post delivery in all parts of the colony for 1d. These must, however, be written only on one side of a card, sold ready stamped for the purpose, the address being written on the other side.

During the year 1875, no fewer than 17,134,101 letters, 7,552,912 newspapers, on which the postage is ½d., and 1,528,493 packets (postage within the colony 1d. for each two ounces), a total of 26,215,506, were passed through the various post-offices of the colony, but of these 129,824 were irregularly posted, having no addresses, or being imperfectly addressed, and of these 117,599 were returned or delivered, the owners being eventually found, and 12,225 destroyed, or kept on hand. 1136 of these were registered letters, containing valuables to the amount of £13,462, but 94 per cent. of them were delivered. The number of letters, &c., posted shows a total increase of 2,339,878 over the previous year. There was also an increase of 8698 in the number of registered letters. About a fourth of the post-offices are also money order offices, and through these the following money orders were passed during the year:—Orders issued, 121,094; amount, £373,436; orders paid, 121,924; amount, £393,383. The money order offices transmit or pay orders to or from any part of the colonies or Great Britain, and are very largely used for the transmission of small sums. The rate of postage to Great Britain is 6d. for single letters, 1d. per oz. for packets, and 1d. for newspapers.

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Allied to the postal department of the colony is the electric telegraph, whose wires stretch far and wide in every direction, and flash instantaneous messages over land or under sea to the remotest parts of the earth. Like the postal, the telegraph arrangements are very extensive, and amply sufficient for the requirements of the colony, extending, as they do, in every direction, and having stations in every important township and centre of population. The telegraph lines in Victoria extend over 2629 miles, the wires measuring 4510 miles. They are connected with the lines of New South Wales, and by means of them, with those of Queensland and New Zealand. They are also connected with the lines of South Australia, and through them, with those of the Eastern Archipelago, Asia, and Europe, and will be shortly connected with those of West Australia. They are likewise connected with those of Tasmania, by means of a submarine cable, reaching from Port Phillip Heads to Low Head, at the mouth of the Tamar River. The number of telegraph stations in Victoria is over 164; the number of telegrams for the year 1875 being, paid, 623,514; unpaid, 109,355; total, 732,899. The rate for telegraph messages within the colony is an uniform one of 1s. for ten words, exclusive of the address, and 1d. per word additional. The rates for the other colonies are somewhat higher, and a special charge is made for cablegrams.

The accounts of the post and telegraph offices are kept together, and show for the year 1875, an income of £206,388, with an expenditure of £291,945.

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CHAPTER IX.

EMPLOYMENT, WAGES, RENTS, PRICE OF PROVISIONS, etc.

EMPLOYMENT is plentiful in Victoria. There is no lack of work for the man, or the woman either, who will and can work. The colony is undoubtedly the home for the industrious working man, who may, with common steadiness, application, and prudence, not only live in comfort, or in fact, as compared with the condition of many working men in the overcrowded cities of Europe, in affluence, but who may easily save enough to enable him soon to become a freeholder and his own landlord, and it may be, to start in business on his own account. Hundreds who have landed on these shores in poverty have done so, and there is ample room and verge enough for hundreds, aye, thousands more to do the same thing. The country is not half populated, and it is by workers, not dreamers, that it must be populated.

But there is the right sort of population, even of working population, and the wrong sort. There is scarcely a handicraftsman of any kind who cannot at once, and for good wages, secure permanent employment, and most are sought after with avidity by employers whose jobs are being delayed for sheer want of skilled labour. The carpenter, the builder, the plasterer, the stonemason, the painter, the worker in wood, or in iron, the makers of articles of clothing, of use, of luxury, the purveyor of what we eat, drink, wear, use, with all their concurrent and connected artizans, are needed, are absolutely wanted, not only in Melbourne, the capital, but all over the country. The farmer, the ploughman, the farm labourer, all whose interests are connected with agricultural pursuits, have millions of acres waiting to their hand, and nothing but patience, pluck, and perseverance, are wanted to enable them to go

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forward upon it, and prosper. These, men of energy and courage to face and overcome the first difficulty, are those who will and must succeed in any new country, most of all in this.

But the lazy, the improvident, those who are too poor to be independent, too proud or unable to put their hands forth to manual labour, had better stay away, for they must inevitably go to the wall. The race here is to the swift, the battle to the strong. Clerks, men wanting light genteel employment, *et hoc genus omne*, there is little or no room for.

For the honest, industrious, prudent man, whether artizan or agriculturalist, whether earning his bread in the smoke and turmoil of cities, or tilling the grateful virgin earth in the fresh free air, there is a certain hope of ultimate success, and a steady improvement in his worldly good. This all may hope for, this all, who try conscientiously, may attain. Therefore is it that, as was said at the beginning of this chapter, the colony is undoubtedly the home for the industrious working man.

Wages are good. Let us see what wages are here, as compared with those in Europe. From the current rates of wages actually paid for various kinds of labour, and published monthly in the Melbourne newspapers, we cull the following statement made in the Melbourne *Age* of 3rd September, 1877:—

Bakers: Foremen and first-class workmen, £2 5s. to £3 10s. per week; second hands, 35s. to 40s. In small shops lower rates prevail. Building trades: Stonemasons, 10s. to 11s. per day; bricklayers, plasterers, slaters, 10s.; carpenters, 10s.; labourers, 7s.; pick and shovel men, 6s. Butchers: Shopmen, 35s. to 40s. per week; boys, 15s. to 20s.; slaughtermen, 40s. to 50s.; small-goodsmen, 30s. to 40s. with rations. Cabinetmakers: Wages vary greatly with the class of shop and ability of the men. In the superior shops in the city the amounts earned are from £3 to £4 per week, and in others from £2 10s. to £3 10s. In country towns lower rates prevail. Coachbuilders: Smiths, £2 10s. to £3 15s. per week, a few very superior men receiving £4. Bodymakers are mostly paid by the piece, and good hands can earn from £2 10s. to £3 10s. Wheelers also work by the piece, and earn from £2 10s. to £3 10s. Painters, 9s. to

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10s. per day. Trimmers, £2 10s. to £3 per week. Vycemen, from 30s. to 40s. Coopers: Mostly paid by piece-work, but day-work is 9s. for the day of ten hours. The rates for tallow casks are 5s. for thirds, and 4s. 6d. for fourths. Drapers: In first-class shops drapers' assistants and carpet salesmen have from £3 to £4 per week; first-class milliners, £3 to £3 10s.; second-class, 35s. to 50s. Farriers: Firemen, 55s. per week; doormen, 45s.; inferior hands, 30s. to 40s. Gardeners: Best men near town, 30s. to 42s. per week. In the country, 20s. to 25s. with rations. Inferior hands, 15s. with rations. Hatters: Bodymakers—Low crown, 12s. and 14s. per doz.; regulars, 18s. and 20s. do. Finishers—Low crown, 12s. and 14s. per doz.; silk hats, 22s. and 24s. do.; pullovers, 20s. do. Shapers—Regulars—plain shape, 6s. per doz.; over ⅛ths, 9s. do.; Anglesea. 12s. do. Low crowns—under ⅛ths, 4s. per doz.; over ⅛ths, 6s. do.; Anglesea, 8s. do. Crown sewers, average 3s. 6d. to 5s.; trimmers, 6s. Jewellers: Manufacturing jewellers, average workmen, 55s. to 65s. per week; finer workmen, £5 to £6 per week. Seal engravers and enamellers are wanted, and can obtain from £6 to £8 per week. Miners: For surface work, 40s. per week; underground, 45s.; specially deep wet mines, 50s. Painters and glaziers: Average rate 9s. per day. Plumbers and gasfitters: Average £3 per week. Printers, &c.: Compositors, 1s. per 1000; lithographers, £2 10s. to £3 15s. per week; binders, £2 to £3; paper-rulers, £3 to £3 10s. Sailors: In sailing ships, £5 per month; steam vessels, £6 per month. Ship carpenters: employment very irregular, average rate, 13s. per day. Stevedores: Lumpers get 12s. per day. Drivers of donkey engines, £18 per month. Tailors: The rate by the log is 1s. per hour, but in second-class shops the men earn from £2 10s. to £3 per week. Tanners and curriers: Beamsmen, 40s. to 50s. per week; shedsmen, 42s. to 45s.; tanners, 38s. to 45s.; curriers (piecework), from 50s. to 70s. Tinsmiths, from £2 to £3 per week (piecework), Watchmakers: Average rate, £4 per week; superior workmen as high as £6. Grooms in livery stables, 30s. to 40s. per week; coachmen, 40s. to 50s.; navvies, on railways, 9d. per hour.

The following are the wages ruling for domestic servants, &c.:—For town: Housemaids, £25 to £30 per annum; female cooks, first-

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class, £40 to £75; others from £26 to £36 per annum; male do. 30s. to 80s. per week; nursemaids, £25 to £35 per annum; nursegirls, 8s. to 10s. per week; laundresses, £35 to £45. For hotels: Cooks (male and female), £50 to £150 per annum; housemaids, £35 to £40. For stations: First-class married couples, for home stations, £70 to £90 per annum; second-class do., with children, £40 to £50; cooks, £45 to £55; housemaids, £35 to £40. For farms: Men cooks, £50 per annum; married couples, £60 to £70; women servants, £30 to £35; farming men, 15s. to 20s. per week; milkmen, 15s. to 25s.; ploughmen, 18s. to 22s. 6d.; waiters for hotels, 20s. to 35s. per week; grocers' assistants, 15s. to 30s.; general store do., 20s. to 40s.; nursery governesses, £30 to £40 per annum; finishing do., £60 to £80.

Station hands' wages are as follows:—Stockmen, £60 to £75 per annum; shepherds, 15s. to 20s. per week; ordinary working men, 15s. to 20s.; drovers, 25s. to 40s.; gardeners, 15s. to 20s.

So much for tradesmen and handicraftsmen. Can they, could they ever hope, working such hours, generally eight hours per diem, to earn such wages at home? We trow not.

But, it may be said, and often has been said by those who wished to throw cold water on emigration, and to keep the working man for ever with his nose to the grindstone:—"Although we grant you that labour is plentiful and that wages are high, still the cost of living is so great that you are better off where you are earning less than half the money, than in the colonies, earning the high wages, but having to pay four times the price for everything you eat, drink, and wear." An excellent argument, certainly, if it were true.

The following may be quoted as the average prices in Melbourne, in March, 1877, of the chief articles of consumption for the year 1876--7. The cost of groceries, wines, spirits, &c., is generally somewhat higher, and of agricultural and grazing produce somewhat lower, in country districts:—*Agricultural Produce*—Wheat, per bushel, 5s. to 6s. 6d.; oats, 3s. to 4s.; barley, 3s. to 5s.; Maize, 3s. 6d. to 6s.; bran, 1s. 3d. to 1s. 8d.; hay, per ton, £3 10s. to £6; potatoes, £3 to £8; flour, £14 5s. to £14 10s.; bread, per 4-lb. loaf, 6d. to 7d. *Grazing produce*—Horses, draught, £10 to £40; saddle, £5 to £50;

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fat cattle, £6 10s. to £16 2s.; milch cows, £4 to £12 10s.; fat calves, £1 10s. to £3; fat sheep, 7s. to 22s.; fat lambs, 6s. to 10s. 6d. *Butcher's meat*—Beef, retail, per lb., 4d. to 8d.; mutton, 2½d. to 4d.; veal, 6d. to 8d.; pork, 7d. to 9d.; lamb, per quarter, 1s. 6d. to 3s. 6d. *Dairy produce*—Fresh butter, per lb., 1s. to 1s. 6d.; salt butter, 8d. to 1s.; colonial cheese, 10d. to 1s. 2d.; imported, 1s. 6d. to 1s. 10d.; milk, per quart, 4d. *Farm yard produce*—Geese, per couple, 8s. to 12s.; ducks, 5s. to 8s.; fowls, 5s. to 7s.; rabbits, 1s. to 2s.; pigeons, 1s. 3d. to 5s.; turkeys, each, 6s. to 12s.; sucking pigs, 8s. to 14s.; bacon, per lb., 10d. to 1s. 2d.; ham, 1s. to 1s. 3d.; eggs, per doz., 1s. to 2s. 6d. *Garden produce*—Potatoes, wholesale, per ton, £3 to £6; retail, per lb., ¾d. to 1d.; onions, per cwt., 6s. to 12s.; carrots, per dozen bunches, 6d. to 1s.; turnips, 6d. to 1s.; radishes, 6d. to 1s.; cabbages, per dozen, 6d. to 2s.; cauliflowers, 1s. to 4s.; lettuces, 4d. to 1s.; green peas, per lb., 1d. to 3d. *Miscellaneous articles*—Tea, per lb., 1s. to 3s. 6d.; coffee, 1s. to 1s. 6d.; sugar, 3d. to 6d.; lump, 7d.; rice, 2d. to 4d.; tobacco, 1s. to 6s.; soap, 3d. to 4d.; sperm candles, 9d. to 1s.; tallow candles, 4d. to 6d.; salt, 1d.; coal, per ton, 20s. to 35s.; firewood, 12s. to 18s. *Wines, Spirits, &c.*—Ale, per hhd., £4 to £9 5s.; per doz., 6s. to 11s.; porter, per hhd., £5 to £7; per doz., 7s. 6d. to 11s.; brandy, per gal., 4s. 10d. to 31s.; rum, 3s. to 3s. 6d.; whisky, 4s. to 10s.; hollands, 2s. 9d. to 4s.; port wine, per doz., 25s. to 55s.; sherry, 25s. to 85s.; claret, 10s. 9d. to 80s.; champagne, 26s. 9d. to 100s.; colonial wine, per gallon, 1s. upwards.

These prices, which may be relied on as being the correct prices ruling, subject, of course, to variations n some of the articles, as they are in or out of season, constitute all the necessaries, and some of the luxuries of life, and are, as will be seen, very little different to home rates, some a little higher, perhaps, others lower. Fruit, comprising grapes, peaches, nectarines, apricots, oranges, bananas, passion fruit, apples, pears, cherries, plums, damsons, red, white and black currants, Cape gooseberries, loquats, strawberries, raspberries, mulberries, gooseberries, pine-apples, and other fruits, are plentiful in their respective seasons, and may be had quite as cheaply, and in most cases far more cheaply than in Great Britain.

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Wearing apparel, slops, soft goods, boots, &c., are reasonable, the imported articles being subject to a duty, in no case higher than 20 per cent. *ad valorem*, but the colonial-made goods, consisting of boots, hats, tweeds, shawls, blankets, and male and female clothing of all kinds, can be purchased of excellent quality and at low prices.

From these prices it is clearly shown that the ignorant or wilfully-erroneous statements made in the old country regarding the high price of living in Victoria are totally devoid of foundation, and that, taking into consideration the higher rate of wages, living is far-and-away less costly than it is in the cheapest parts of Europe. Certainly house rents are higher, but it must be remembered that the working men of Australia are not content to dwell in the close narrow streets and crowded alleys of older Britain. Every working man, with any pretension to decency, must have his neat cottage in a wide, open thoroughfare, with probably his little patch of flower garden railed in before the door. His rent will thus range from 5s. to 10s., or, perhaps 12s. per week, according to the neighbourhood, the distance from town, and the class of house, but for the latter sum he may easily obtain, within easy distance of the centre of the city, a verandah-cottage, with a small garden and a roomy yard behind, containing four, or perhaps five rooms; a bathroom, with plunge and shower bath (an unspeakable luxury in the summer season); gas and water laid on; and the cottage handsomely finished, and furnished with grates, ovens, gasfittings, chiffonniere cupboards, shelving, and all other appliances for use and comfort he can wish for himself and family.

But he does not need, if he be moderately careful and steady, to pay even that rent long, for, with or without the aid of one or other of the numerous excellent and liberal building societies, he can easily acquire a small allotment of ground, and build thereon his own brick, stone, or weatherboard house, and so, after a time, live—with the exception of the local taxation, which is light—rent free, a man having a stake in the country, a citizen, and a freeholder.

Although much of this article may seem to commend itself more especially to artisans whose interests are connected with the large towns, still it bears with equal truth on those whose avocations

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lead them into the country, for although outside the towns they may not be able to rent houses of such pretensions as in them, still there is no difficulty in obtaining comfortable residences, and as the rents are lower, and the facilities for becoming possessed of land greater, so the inducement to become freeholders is stronger, and the means of doing so still easier.

The small capitalist farmer, however, and the agricultural labourer who reads this chapter, and in conjunction therewith, chapter III., which deals with the agricultural interest, will see embodied therein a simple, ready, and cheap means of settling on the land, a purpose not altogether connected with the subject on which this chapter purports to deal.

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CHAPTER X.

MORAL AND MENTAL CONDITION OF THE POPULATION, EDUCATION, etc.

One of the proudest boasts of Victoria, as a free country, is that there is no such thing as religious intolerance within her borders. Every man is perfectly at liberty to enjoy his own religious opinions and to follow the tenets and practices of his own creed, so long as he does not break the law, outrage propriety, or interfere with his neighbour. There is no State Church, nor does any one religious denomination enjoy privileges denied to any other. Whether a man professes religion or no religion there is no interference with his civil rights, nor is the line of demarcation between one creed and another so marked as in other countries, where one particular religion is looked upon as, *par excellence*, that of the people. Religions are, to some extent, blended, and even the clergy, generally the most conservative body in existence, frequently meet on a common platform when questions of public good are to be considered.

It might be thought that such a free and easy system might lead to irreligion, or to neglect of public worship on the part of the people, and yet so far from such being the case, there is perhaps no part of the world where religious ordinances are more conscientiously attended to, or are held in greater respect by non-professors, than in Victoria. More, it would be hard to find a place where more opportunities are afforded to the public to meet in religious communion, or where larger, more orderly, and more respectable congregations gather together, sabbath after sabbath, to "the sound of the church-going bell." The clergy of all denominations throughout Victoria, registered for the celebration of marriages, numbered 669 at the end of the year 1875. The total number of buildings used for public worship was 2519. The approximate number of services

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during the year was 206,883; the number of persons for whom accommodation was provided was 421,377, and the numbers usually attending at the principal service on the sabbath averaged 296,262.

The religions professed by the people of Victoria at the date of the last census were as follows:—Episcopalian Protestants, 257,835; Presbyterians, 112,983; Methodists, 94,220; Independents, 18,191; Baptists, 16,311; Lutherans, 10,559; Church of Christ, 3540; Moravians, 93; Calvinists, 1432; Friends, 333; Unitarians, 1016; other Protestants, 1028; Roman Catholics, 170,620; Apostolic Church, 278; Greek Church, 332; Christian Israelites, 285; Mormons, 97; Jews, 3571; other sects, including Pagans, mostly Chinese, 18,392; no denomination, 2737; no religion, 2150; unspecified, 5560; objecting to state their religion, 9965.

In connection with the churches are 1430 sabbath schools, with 12,055 teachers, and 108,388 scholars. Of these schools, 270 are Church of England, 208 Roman Catholic, 315 Presbyterians, and 478 Wesleyan. It may be stated here that 1875 was the last year of the reservation of £50,000 annually from the revenue for the purposes of public worship, therefore since December, 1875, State aid to religion has been abolished.

The state of education in Victoria, taking all things into account, may be said to have reached a high standard, and for the future there can be no reason why that standard should not be still higher. Of one thing there can be no doubt, namely, that while the existing system lasts, and it seems to have become the recognised law of the land, education in the colony will be virtually universal. That system, which was not passed through the Legislature without strenuous opposition on the part of the clergy, is one of free, compulsory, and secular education, the religious element, or the slightest approach to teaching the tenets of any creed or sect, being strictly forbidden in the public schools. At first this measure was viewed with distrust by many worthy but short-sighted persons, such distrust being incited by the hostility of the clergy, who viewed with alarm the prospect of so much power passing from their hands, and who denounced the system as godless and atheistic. With the exception of a few ill-advised pastors of one or two

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denominations, they, the clergy, have however now accepted the position, finding it better to direct their energies towards giving religious instruction to the children out of school hours, than to waste their time in fruitless efforts to overturn a system which has received the cordial approval of the public voice, and which promises to conduce so much to the public weal.

Prior to 1862 two systems of education, named respectively the Denominational and the National, were supported by the State in Victoria; but in September of that year they were blended into one system under the Common School Act (25 Vict., No. 140). That Act, however, was repealed by the present Education Act (36 Vict., No. 447), which came into force on the 1st January, 1873.

The present Act provides that the Department of Education shall be presided over by a responsible Minister of the Crown, styled the Minister of Public Instruction, and also provides for what are called boards of advice, elected in the various school districts. The subjects taught free are reading, writing, spelling, writing from dictation, arithmetic as far as vulgar and decimal fractions, grammar, geography, and disciplinary exercises, also needlework for girls. Drill and gymnastics are taught when practicable. Extra subjects, such as Latin, French, or any other language, Euclid, trigonometry, algebra, the elements of natural science, mensuration, bookkeeping, singing and drawing, are also allowed to be taught at certain prescribed low rates, to be charged for to the parents. The compulsory clause of the Act applies to children between six and fifteen years of age, each of whom is required to attend at a State-school for a period of sixty days in each half-year, unless the child has been educated up to a certain standard, is educated elsewhere, or is prevented from attending by sickness, distance, or other unavoidable cause, and parents are liable to penalties for non-fulfilment of the requirements of the Act.

During 1875 the number of public schools, including State day and night schools, and capitation schools, was 1320, the number of instructors 3826, the number on the rolls 220,533, and the number in average attendance 101,495. The average attendance in 1874 was 104,375, but the diminished attendance is accounted for by the fact

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that during 1875, some of the schools were closed at various periods on account of the prevalence of the epidemics of scarlatina and measles.

Of private schools there were 565, having 1511 teachers, and 27,481 scholars, but five of these schools are colleges or grammar schools, which at a former period received sums of money and grants of land from the Government for the erection of school buildings, although no State assistance is now given them. They are all connected with some religious denomination, and in connection with some of them there are exhibitions, chiefly with the view of assisting the ablest pupils to complete their education at the university. These colleges are known as the Melbourne Grammar School (Church of England), which in former years received £13,784 towards building, 7 masters, 149 scholars; Geelong Grammar School (Church of England), £7000, 8 masters, 124 scholars; Scotch College (Presbyterian) £6445, 14 masters, 340 scholars; Wesley College (Wesleyan) £2769, 12 masters, 230 scholars; St. Patrick's College (Roman Catholic) £2500, 9 masters, 166 scholars. Total grant in aid of building, £32,498, 50 masters, 1009 scholars.

The Melbourne University for the higher branches of education was established under a special Act in January, 1853, and was opened in October, 1855. The Act provides for a council of twenty members, of whom sixteen must be laymen, and who shall elect from their body a Chancellor and Vice-Chancellor, also for the constitution of a senate, to be presided over by a warden, and for the endowment of the university by the payment of not less than £9000 per annum out of the general revenue. It further provides that no religious test shall be administered to any one to enable him to be admitted to the privileges and advantages of the university. By Royal letters patent, issued in March, 1859, it was declared that all degrees granted, or to be granted by the Melbourne University, should be recognised as academic distinctions and rewards of merit as fully as if they had been granted by any university in the United Kingdom.

The students who matriculated in 1875, numbered 93 as against 118 in the previous year. From the opening of the University in 1855, to the end of the year, the students who matriculated amounted

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to 923. The undergraduates who attended lectures during the year were as follow:—Arts 56, laws 60, engineering 27, medicine 52—total 195. The number of graduates was 34, of whom 29 took direct, and 5 *ad eundem* degrees. Of the former 10 graduated B.A., 6 M.A., 3 M.B., 1 M.D., and 9 LL.B.; of the *ad eundem* degrees, 3 were B.A., 1 M.A., and 1 LL.B.

The total graduates since 1855 have been 430. The total receipts of the University during 1875 amounted to £15,179, of which £9000 was obtained from Government, £5947 from college fees, and £232 from other sources.

It will thus be seen that with regard to the two important matters, the religious and mental culture of the population, Victoria may compare favourably with any part of the world. With regard to the former, eminent and talented preachers are warmly welcomed and liberally paid by their congregations, and the prizes to be won by men who have made or can make their mark in the clerical world, are neither few nor, in a pecuniary point of view, lightly to be despised. Regarding the latter, it may be fairly said that the Government has set an example which might be profitably followed anywhere, inasmuch as while providing liberally for the higher branches of education, they have devoted most of their energies to the compulsory training of the young in the more rudimentary branches, and, education being free, there is not the slightest excuse even for the poorest parents, in not giving to their offspring that boon, more priceless than all others, a good education.

Notwithstanding the fact that in the earlier days of the colony, and especially during the first of the gold rush, it was visited by so many new comers, many of whom were desperadoes and scoundrels—the riff-raff and off-scouring of society from all parts of the world,—and, notwithstanding that, to some degree, the taint of that ruffian element remains still in our midst,—yet Victoria can compare favourably in point of morality and immunity from crime with most parts of the world. Of the children born during 1876, which numbered 26,769, there were 975 registered as illegitimate, being one in every 27¼. Supposing all the children born out of wedlock to have been registered as such, illegitimacy is much more common in England and

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Wales than in Victoria—the illegitimate births there during the eleven years ending with 1873 having been 1 in every 17 registered. The gradual diminution of crime generally is marked by the circumstance that, notwithstanding the increase in the population of the colony, fewer and fewer arrests have been made during the past ten years, and the diminution in the number of serious offences is indicated by the fact that the number of persons committed for trial follows the same rule. Diminished numbers are observed in respect to all the more serious crimes, especially murder, wounding or poisoning, rape, unnatural offences, robbery with violence, and horse, sheep, and cattle stealing. The numbers arrested for drunkenness show a steady decrease during the period named.

The charities of Victoria are noble and large. Hospitals for the sick, asylums for the afflicted and bereaved, shelters for the poor, and refuges for penitents, are numerous and liberally supported, partially by Government subsidy, partially by voluntary contributions. Of hospitals there are 32, having 232 wards or rooms, with beds for 1987 patients, and having afforded assistance to 14,477 inmates during the past year; 1 lying-in hospital, with 65 beds, 799 inmates; 1 blind asylum, 102 inmates; 1 deaf and dumb asylum, 84 inmates; 1 eye and ear hospital, 171 inmates; 1 children's hospital, 88 inmates; 5 benevolent asylums for the aged poor, 1683 inmates; 1 immigrants' home, for the relief of the homeless poor, 10,229 relieved; 7 orphan asylums, 1262 inmates; 9 industrial and reformatory schools, 2682 inmates; 4 hospitals for the insane, 3089 inmates; 4 female refuges, 338 inmates: total, 69 institutions, having afforded aid in a year to 34,984 persons, or 8·507 on an average at one time,—a goodly show for charity, and one which speaks volumes for the general prosperity of the colony and the generosity of the colonists.

The mental condition of the population of Victoria, too, may compare favourably with that of other places, as evidenced by the numbers of public libraries, mechanics' institutes, and other similar institutions, which are broadcast throughout the length and breadth of the land. The principal of these, and the one which is the pride of Victoria, is the unequalled Public Library in Melbourne. This building was opened in February, 1856, and, although important

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additions have been made to it since then, it is yet unfinished. The buildings have cost £110,190, the funds being provided by Government, and the total number of volumes in the library at the end of last year was nearly 90,000, the private contributions of books, pamphlets, maps, &c., having amounted in all to about 67,000, of which about 44,000 were presented to the institution, and the remainder deposited under the copyright statute. The Library is open to the public free on week days (an energetic movement has lately been made to have it opened on Sundays as well), between the hours of 10 a.m. and 10 p.m., and was visited during the year by about 240,000 persons.

The National Gallery, which is attached to the Library, contained, at the end of 1875, 5919 works of art, viz., 73 oil paintings, 159 objects of statuary, and 5687 drawings, engravings, and photographs—and all these have been largely added to—partly by purchase, partly by loan, during last year. It is opened at noon daily (Sundays and certain holidays excepted), and is closed at 4 p.m. in winter and 5 p.m. in summer. The school of painting was attended in 1875 by 7 male and 34 female students, and the school of design by 45 males and 107 female students. The Industrial and Technological Museum, also attached to the Library, contained 17,982 objects, principally specimens of art, industry, and natural products. Class lectures are given at this institution on chemistry, mining, mineralogy, telegraphy, &c., and are fairly attended. This institution receives students in all branches of chemical science, both theoretical and applied: in mineralogy, assaying, and geology applied to mining. The fee payable for this course of education and practical training is but four guineas per term (£4 4s.), of which there are four in the year, but pupils may enter at any time. There are two exhibitions of £50 a year, to be holden for one or two years by the two most advanced pupils. All requisite appliances and apparatus, &c., are supplied, and the pupil is charged only for such as are lost or seriously injured. The two latter institutions were visited last year by about 200,000 persons.

Attached to the Melbourne University is the National Museum, an institution containing valuable specimens of minerals, stuffed

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animals, insects, and other specimens of natural history. It is open free to the public, on week days, from 10 a.m. to 5 p.m., and was visited last year by about 100,000 persons.

Besides these places of public resort and instruction in the metropolis, nearly every township in Victoria has its free library, athenæum, or scientific, literary, or mechanics' institute—the number in 1875 being 138; and it is estimated that during that year they were visited by nearly two and a-half millions of persons. The total number of volumes in these institutions was 184,428.

Besides the public institutions named, every place of importance has its place or places of public resort and entertainment—theatres, concert-rooms, and the like. Of these, Melbourne has four fine theatres, three public concert-halls, a town-hall for concerts, balls, &c., having a magnificent organ, an athenæum-hall (to which is attached, or, rather, which is attached to) a reading-room and circulating library, and other places of amusement or recreation of greater or less importance. Ballarat has two theatres and a music-hall; Sandhurst the same; Geelong, one hall, fitted as a theatre; and in nearly every township of any pretension is a room fitted with the appliances for musical or dramatic representations.

In connection with the mental condition of the population, it may be mentioned, too, that schools of art and design exist in Melbourne, Ballarat West (where is also a school of mines), Ballarat East, Brunswick, Clunes, Creswick, East Collingwood, Fitzroy, Geelong, Northcote, Prahran, Preston, Richmond, Sandhurst (where is also a school of mines), Sebastopol, South Melbourne, South Richmond, and St. Kilda,—so that, whether for educational or merely recreative purposes, Victoria may fairly vie, not only with her neighbours of something like her own age, but with those of the older countries of Europe who have enjoyed for ages past the advantages she has only just commenced to enjoy, but which she has, in the exuberance of her youth and energy, grasped at and paid for with so liberal a hand.

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CHAPTER XI.

POLITICAL AND SOCIAL CONDITION OF THE PEOPLE.

CLOSELY allied to the moral and mental status of a people, is their political and social condition. Where the moral and mental condition is low, the people will be found politically and socially abject and debased; where, on the contrary, the moral and mental status is of a high standard, so too will they occupy, socially and politically, a high position in the State.

Victoria is, in a word, essentially politically free. The very nature of her political institutions is such that she must be free, for with certain necessary restrictions, the law places no bar to any man rising to the very highest office under the Crown.

The affairs of the colony are under the control of a Governor appointed by the British Government, whose term of office is usually six years, the present one being Sir George Ferguson Bowen, K.M.G., and of an Executive Council, consisting of the Governor and the Ministry for the time being, and of two Houses of Legislature. The Legislative Council consists of 30 members, representing the six provinces into which the colony is divided, namely, the Central, North-western, North-eastern, Southern, Eastern and Western, which contain 29,110 electors. The qualification for a vote is a leasehold of £50 a year, or a freehold property of the same value. The candidate's qualification is £2500 freehold, or property of the value of £250 annually, the tenure of office being ten years, one of the five members of Council for each province retiring in rotation at the expiration of every two years. The Legislative Assembly consists of 86 members, representing 55 electoral districts, and is triennial in its duration. The members of the Assembly need no special qualification, and members of both Houses are paid £300 per annum for re-imbursing

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their expenses. The number of electors for the Assembly on the roll on the 21st March, 1877, was 181,228, and the qualifications of a voter are so small that the system may be practically considered as one of universal suffrage. The voter must be a male person of twenty-one years of age (not subject to any legal incapacity), a naturalised or denizen subject of the Queen, and have resided in Victoria one year previous to the 1st day of January or July in any year, or have been naturalised at least three years. All voting is done by ballot.

The aspect of Victoria socially is one on which she may with reason pride herself. Out of the chaos of disorder and misrule of the old digging days, the sterling good sense of her people has evolved a social system which is second to none in the world. Victorians are a law-loving, a law-abiding, and an orderly race, and although unquestionably, amongst a certain class, rowdyism exists, still there is no defined body anything like the roughs of London or the hoodlums of San Francisco. Life and property are comparatively safe, and robbery with violence is of rare occurrence. Certainly nothing like "garotting," the crime that rendered London streets so dangerous after nightfall, is practised, and even "bushranging," once a reign of terror in New South Wales, never obtained a footing in Victoria, and when tried was speedily stamped out. The great social failing in the colony is indulgence in strong drink—drunkenness, in fact; but even this, which at one time was looked upon as a venial fault if not a manly attribute, is now regarded rather as a disgrace and a disability, and publicly, at all events, has wonderfully decreased of late, the more as the wines native to the soil are growing in favour with the masses, and dram-drinking, or, as it is colonially termed, "nobblerising," is gradually giving way to the partaking of sound and pure juice of the grape.

The character of a nation has been said by an original thinker to be determined by its songs. Equally well may it be said that the character of a nation is shown by its amusements. Victorians are pre-eminently a people of amusements. Nor do they, as Continental nations say the English do, take their pleasures sadly. Holidays are frequent, and are largely availed of by all classes of

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people. And really a Victorian holiday is something to see, for in no part of the world perhaps can so orderly, so well dressed, and so evidently well-to-do a body of people be found as may be seen, hurrying by road, rail or steamer to pic-nic, review, racecourse, cricket ground, or what not, at holiday time. The outdoor amusements most affected are horse-racing and cricket, and after them football, bowls, rifle-shooting, boating, hunting, and the newly imported games of Polo and La Crosse. Roller skating is also a fashionable amusement, there being numerous rinks in the colony, and Melbourne has a fine hand-ball court, which is extensively patronised.

Every town of any pretension has its racecourse, the metropolitan one at Flemington being the best in Australia, and hardly to be matched in any part of the world. The principal event of the year is the Cup race, which is run for at Flemington in the summer season. The Cup day is the fashionable day of the year, and on that occasion the Flemington Grand Stand (an excellent and commodious building), and "the hill" are crowded with a vast assemblage of visitors from all parts of this and other colonies, and show such a spectacle of well-dressed people as cannot be seen elsewhere, Goodwood in England, and Chantilly and Longchamps in France perhaps excepted. On that day every one turns out to do honour to the occasion, which is looked on as a kind of festival. High and low, rich and poor, alike congregate on the racecourse in tens of thousands, and for the time busy and crowded Melbourne appears deserted. Among the wealthier classes, the ladies especially, it is looked upon as a point of honour to appear arrayed in the gayest and richest apparel that can be obtained, and as a gathering of female beauty and dazzling toilettes, the Melbourne course on a Cup day has long been generally celebrated all over the colonies. The racing is excellent, much attention having been paid to, and large sums of money expended in, the breeding of racehorses.

Every township has, too, its cricket ground, Melbourne having a large number, of which the principal are the Melbourne, East Melbourne, and South Melbourne grounds, on the first-named of which the intercolonial and All-England matches are played. Football is the favourite game in winter, and numerous matches are

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played on the grounds of the various clubs during the season. There are also two or three regattas during the year, but aquatics are not so extensively patronised as in the sister colony of New South Wales. The other sports named, too, have their numerous votaries, and it is but few of the young men of the colony who are not attached to one or more clubs for the prosecution of games of some kind, or who do not belong to one of the numerous volunteer corps, amongst which rifle-shooting is a favourite recreation (butts being provided by Government in suitable places), and which mass together once a year for an encampment in the country, which lasts several days, and comprises a review and a sham fight.

As has been said, Victorians are a people of amusements, but it may also be said that Victorians are a people of work. They do not allow one thing to interfere with the other. There are no half measures. When they work, they mean work, and when they play they go at it with a will. Indeed, it would be hard to find a place where the distinction between labour and recreation is so distinctly understood and carried out, and it would be equally hard to find one where, in proportion to the population, a public holiday can turn out such well-dressed, well-conducted, respectable, and evidently well-to-do crowds of people as are to be seen in Victoria.

In connection with the social condition of the population, it may be mentioned that a laudable desire exists amongst all ranks in Victoria, and especially amongst the labouring population, to possess dwellings of their own. This subject has been touched upon in chapter III., but there the occupancy and purchase of agricultural freeholds is more particularly referred to. The same feeling exists with regard to the purchase of dwelling-houses by the artisans and others employed in the towns of the colony, and to aid in this object building societies have been established in most parts, and have met with a large amount of success. At present there are in Victoria no fewer than fifty-eight of such societies, having 21,750 members, holding 56,988½ borrowing and 140,695½ investing shares. The amount advanced in the year 1876 was £870,203, the income being £1,011,397, the working expenses £28,571, the assets £2,750,660, the liabilities £2,352,282, and the moneys on deposit £611,598.

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The friendly societies of Victoria numbered twenty-eight in 1875. These had 754 branches in various parts of the colony, and an average number of members of 45,924. The number of cases of sickness relieved during the year was 10,359, aliment being allowed for 53,453 weeks. There were 426 deaths, the average number of wives registered under the Friendly Societies Act being 27,021, and the deaths of the same being 169.

There are also numerous insurance offices all over the colony, which do a very extensive business in life and fire insurance, the necessity for making a provision for their families in case of death being a duty strongly impressed on the public mind, and being very largely carried out.

In addition to these, which are established by private enterprise, the Government, in order to foster habits of frugality and thrift amongst the people, has established what are known as savings banks and post-office savings banks all over Victoria. The savings banks are under the control of five commissioners, in whom are vested all deposits and securities. These savings banks are eleven in number, and are established at Melbourne, Geelong, Portland, Belfast, Castlemaine, Sandhurst, Ballarat, Maryborough, Warrnambool, Kyneton, and Hamilton. The rate of interest on deposits is fixed by the commissioners, but by the Savings Banks Statute (28 Vic., No. 263), it must not exceed 4 per cent. per annum. On the 30th June, 1876, the end of the savings banks financial year, the number of depositors was 27,506, of whom 15,834 were males, and 11,672 females. The total amount of depositors' balances was £889,958, an average amount of £32 7s. 1d. for each depositor. It was found, however, that of the depositors 16,686 had accounts less than £20 to their credit; 4653, less than £50; 3160, less than £100; 1723, less than £150; 1024, less than £200; and 260 had more than £200.

By the Post-office Statute of 1865 (29 Vic., No. 277), post-office savings banks were established, and interest allowed on deposits not exceeding 4 per cent. (The rate of interest has since been reduced to 3 per cent.) On the 11th September, 1865, post-office savings banks were opened at Melbourne, Williamstown, Geelong, Ballarat,

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Sandhurst, Castlemaine, Maryborough, and Beechworth, and between that date and the 30th June, 1876, at 159 towns in all. The number of depositors was 41,521, the amount of depositors' balances £617,277, and the average amount of each depositor £14 17s. 4d.

Besides these banks there are several deposit banks founded by private enterprise, and largely patronised by persons who prefer the higher rate of interest given at them than at the savings banks to the perfect security offered by Government institutions. The principal of these are the Melbourne Banking Corporation, the Land Mortgage Bank, and the Victoria Savings Institute. All these have influential proprietaries, and appear to be in a prosperous condition. Many of the building societies also receive deposits for fixed periods, and the security offered by them is probably equal to that held out by the deposit banks.

Connected to a certain extent with the social condition of the people, although more nearly perhaps with the commercial interest, are the banks of issue in Victoria. Of these there are twelve, viz.:—The Australian and European Bank, Bank of Australasia, Bank of New South Wales, Bank of Victoria, City of Melbourne Bank, Colonial Bank of Australasia, Commercial Bank of Australia; English, Scottish, and Australian Chartered Bank, London Chartered Bank of Australia, National Bank of Australasia, Oriental Bank, and Union Bank of Australia. Of these five are local institutions, and the remaining seven have proprietaries outside the colony. These banks are regulated under the Banks and Currency Statute (27 Vic., No. 194). By this Act each bank is compelled, under heavy penalties, to compile and publish quarterly in the *Government Gazette* a general statement of its business, so that the public is made aquainted with the exact financial position of the bank, four times a year.

The number of branches or agencies, &c., in Victoria, is 293. Their total liabilities are—Notes in circulation, £1,335,478; bills in circulation, £54,472; balances due to other banks, £287,179; deposits not bearing interest, £4,722,549; deposits bearing interest, £10,127,599. Total, £16,527,277. The assets are—Coined gold, silver, and other metals, £3,162,188; gold and silver in bullion and bars, £357,189; landed property, £790,129; notes and bills of other

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banks, £129,000; balances due from other banks, £341,156; all debts due to the banks except notes, bills and balances due from other banks, £19,138,461. Total, £23,918,123. The capital and profits accounts show—Capital stock paid up, £8,630,745; average per annum of last dividend declared, 10⅞ per cent.; average per annum of interest paid to shareholders, 11·757 per cent.; total amount of last dividend, £507,340; amount of reserve profits, £2,650,096.

These large figures, which, while they show the firm basis on which the banks are established, also denote the extent to which commercial transactions are carried on, go far to prove the substantial and satisfactory state of the colony in a financial point of view, and, as the greater includes the lesser, so it may be argued that what is true of the colony as a State, is also true of its population with regard to their material wealth, and through that, to their social condition.

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CHAPTER XII.

DIVISION OF THE COLONY, PRINCIPAL TOWNS, &c.

VICTORIA is divided into seven mining, six Council (electoral), and fifty-five Assembly (electoral) districts, thirty-seven counties, fifty-nine municipalities, and 110 shires; also into parishes, and police and other districts for special purposes. The five original divisions are the districts of Gipps Land, the Murray, Wimmera, Loddon, and the settled districts.

Gipps Land, so called after Governor Gipps, one of the early Governors of New South Wales, occupies the south-eastern part of the colony, and is shut in on the north and north-east by ranges of lofty mountains, and on the west by a heavily timbered, swampy, and broken tract of country. It occupies about one-fifth of the entire territory, and owing to the rugged character of its northern and eastern parts, much of that portion is unavailable for agricultural purposes. Still, it contains large tracts of fertile country suitable either for agricultural or pastoral pursuits, there being, especially in the south and south-west (where considerable areas have lately been taken up under Grant's Land Act — see chapter III.),—rich deposits of alluvial soil. The heavy but valuable timber with which a large portion of it is covered, causes clearing to be attended with considerable expense, although large returns amply repay the trouble and cost of cultivation, and a large proportion of the fat cattle for the Melbourne market are received from it during the winter months. Gipps Land is very rich in minerals, yielding gold, silver, copper, iron, tin, lead, coal, marble, and limestone. Auriferous quartz reefs are worked with considerable success in the hilly north-west portion of the district. The climate and soil of the lower country is suited to the growth of

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oranges, lemons, hops, tobacco, and opium, and the south-west for almost all kinds of agricultural produce. In fact, when properly developed, this district promises to become what the late Henry Kingsley prophesied it would one day be, "the brightest jewel in the British Crown." It is splendidly watered by large rivers and lakes, the former being the Avon, Thompson, Tambo, Snowy, La Trobe, and many others; and the latter, lakes Victoria, Wellington, and King, with numerous lagoons. The fishing and shooting are unsurpassed in the colony, and form a great attraction to sportsmen. The principal towns are Sale, Stratford, Bruthen, Alberton, Rosedale, Tarraville, Palmerston, Bairnsdale, and Jericho. The population of the district is about 20,000, but the opening of the railway now in progress from Melbourne to Sale, will probably soon quadruple that number. The geological formation is chiefly volcanic, with outcropping beds of granite and trap to the north-east. In the south it is carbonaceous, and auriferous country has been found over almost all the explored parts of the district.

The Murray district, comprising the Omeo, Ovens, and Goulburn subdivision, is a vast tract of country forming the north-eastern part of the colony, and is separated from Gipps Land by the Dividing Range. It is generally a mountainous country, and is very rich in auriferous wealth. It contains several fine rivers, the Kiewa, Ovens, Mitta Mitta, Broken, Goulburn, and others, and is bounded on the north by the Murray river. In the north-east are extensive grassy plains, and there are tracts of rich agricultural land eminently suited to the culture of the vine, olive, tobacco, and wheat. In fact, some of the best wine and tobacco produced in the colony come from this district. The principal towns are Avenel, Euroa, Benalla, Wangaratta, Chiltern, Beechworth, Belvoir (Wodonga), Yackandandah, Tarrawingee (all on the North-Eastern Railway), Wahgunyah, Rutherglen, Buckland, Bright, Mansfield, Jamieson, and Woods Point. The general geological formation is lower silurian, with recent surface drift of slate and shale, and occasional outcropping beds of granite and basaltic plains.

The Wimmera district occupies the north-west part of the colony, and is also bounded on the north by the Murray river. Up to

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a late period it was thought that the whole of this vast district consisted of sandy and sparsely grassed plains, intersected with belts of myall scrub, and forests of she-oak and stringy bark, and therefore fit for nothing save the depasturing of sheep. Later research, has however, discovered large patches of good agricultural land which have been taken up by settlers. The principal rivers are the Wimmera, Avon, Richardson, and Yarriambiack creek, which are, however, all more or less liable to dry up, or become mere chains of waterholes. In fact, the great drawback to the vast plains in this district is the scarcity of water in summer, although wells, sunk to a depth of from 80 to 140 feet, almost invariably give good fresh water. The geological formation is pleiocene tertiary, with granite and porphyry dykes. Gypsum has been found in a few places throughout the district.

The Loddon district comprises a tract of pastoral country, in which good agricultural land has recently been found and taken up, lying on the Murray, Loddon, Avoca, and Campaspe rivers, between the districts of Wimmera and Murray. The south part of the district is very rich in auriferous deposit, and has long been worked for gold with great success. The principal towns are Sandhurst (formerly Bendigo), Echuca, Ravenswood, Dunolly, Inglewood, and Wedderburn. The geological formation is lower silurian, with recent surface drift.

The Settled district comprises the whole of the south and south-west part of the colony, including the districts of Melbourne, Castlemaine, Geelong, Ballarat, Warrnambool, Hamilton, Stawell, Ararat, and all the towns and country lying south of the main Dividing Range, except Gipps Land, and it is in this part of the country that, as yet, the principal portion of settlement has been going on. The soil and climate is various, and at different places will grow almost any crop that may be sown in it. (See chaper III.)

The colony is also divided into seven mining districts, each of which is under the control of a mining warden, viz.:—Ballarat, Beechworth, Sandhurst, Maryborough, Castlemaine, Ararat, and Gipps Land. (For electoral districts see chapter XI.)

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Victoria is also divided into thirty-seven counties, viz.:—Anglesey, Benambra, Bendigo, Bogong, Borung, Bourke, Buln-Buln, Croajingolong, Dalhousie, Dargo, Delatite, Dundas, Evelyn, Follett, Gladstone, Grant, Grenville, Gunbower, Hampden, Heytesbury, Kara-Kara, Karkarook, Lowan, Millewar, Moira, Mornington, Normanby, Polwarth, Ripon, Rodney, Talbot, Tambo, Tanjil, Tatchera, Villiers, Weeah, and Wonnangatta. The most densely populated of these counties according to the last census was the metropolitan county Bourke, with 236,778 persons, or over 136 persons to the square mile; the next was Talbot, containing Clunes, Castlemaine, Creswick, Daylesford, Maryborough, Amherst, Maldon, and other important goldfields, with 84,762 persons, or 52 to the square mile; then Grenville, containing the City of Ballarat, and the chief part of the Ballarat and other goldfields, with 60,917 persons, or 41 to the square mile; then Grant, with 40; Bendigo, with 23; Dalhousie, an agricultural county, with 20; then Villiers, also an agricultural county, with 13; and so on down to Weeah, a county in the Wimmera district, close to the South Australian frontier, believed to be totally uninhabited, inasmuch as no person was found in it on the census night.

In 1861 there were in Victoria about six persons to the square mile. In 1871, when the last census was taken, there were more than eight to the square mile. In England and Wales there were 389 persons to the square mile. This allows one and three-fifth acres for each inhabitant of England and Wales, whilst in Victoria there are 77 acres for each individual.

There are 59 municipalities or cities, towns, and boroughs in the colony, having a total area of 230,683 acres, with a population of 398,117, and 88,516 dwellings, a total value of ratable property of £29,638,515, and an annual value of £2,971,823. The revenue for 1876 was £446,256, and the expenditure £423,885. Under the Local Government Act, boroughs must not be of greater area than nine square miles, and must have a population of at least 300. They are governed by a mayor and council, of not less than six nor more than nine, who are empowered to levy rates, make by-laws, compulsorily

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take land for permanent public works, &c. If, in a borough, the annual revenue reaches £10,000, it can be proclaimed a town. If the revenue reaches £20,000, it can be proclaimed a city, and under this provision the metropolitan suburbs of Fitzroy, Prahran, Emerald Hill, and Richmond have become towns, and the suburb of Collingwood and the towns of Ballarat and Sandhurst have become cities. There are also 110 shires in Victoria, having an area of 48,087,227 acres, an estimated population of 411,735 persons, and 89,373 dwellings. The estimated value of ratable property is £43,415,832, and the annual value £3,649,874, the revenue being £595,146, and the expenditure £582,481. Any portion of the country not included in a city, town, or borough, containing an area of not less than 100 square miles, may be proclaimed a shire, provided their revenue raised from rates not exceeding 1s. in the pound on the net annual value of property amounts to not less than £1000, and road districts must embrace 40 square miles, and have an annual ratable value of £5000. These districts are under the control of boards of six members, of whom one is elected chairman of a road district or president of a shire.

The metropolitan and largest city of Victoria is Melbourne, on the Yarra Yarra River, near Hobson's Bay, and in the county of Bourke. It is by far the most important city in the Southern hemisphere, and has, with its suburbs, a population of 265,000. The city proper has an area of 4480 acres, a population of 61,000 persons, and 12,844 dwellings. The estimated total value of ratable property in Melbourne is £8,568,100, and the net annual value £856,810, the revenue for 1876 being £112,653 2s. 11d. and the expenditure £101,246 16s. 5d. Melbourne is a city which, although only of a few years' growth, would do no discredit, whether for the width of its streets, the number and elegance of its public buildings, the business transacted in it, the magnificence of its shops, the beauty of the numerous parks and gardens by which it is environed, or the thousand comforts and conveniences afforded to its residents, to any country on the face of the earth. Indeed, it has been spoken of as the ninth city in the British world for population, wealth, and magnificence. The city proper is built on two

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hills, and an intervening valley, the streets running at right angles, each main street being ninety-nine feet wide, and each minor street half that width. These main and minor streets run alternately from east to west, but there are no narrow streets from north to south. Thus the city is cut up into handsome blocks from east to west, and half blocks from north to south. The principal streets are Collins, Bourke, Swanston, and Elizabeth streets, the first-named being the fashionable business street of the city, and a system has lately been inaugurated of planting trees in the main thoroughfares, which was commenced in this street, and cannot but be productive of highly valuable results, in a town where the heat is so intense and the dust is so troublesome in summer. The future adornment of the streets in this direction is left in the hands of the citizens. The most noteworthy edifices are the Treasury, Houses of Parliament, Public Offices (just built), Public Library, Post Office, Government Printing Office, Customs' House, Mint, University, Town Hall, banks, insurance offices, and many large and well built hotels, of which the leading ones are Scott's, the Port Phillip, White Hart, Albion, Menzie's, Phair's, and Tankard's, the last-mentioned being a Temperance hotel. The port of Melbourne is at Sandridge, two and a-half miles from the city, and connected by railway. The Yarra River is, however, navigable for large vessels up to the heart of the city, the fairway being there impeded by a dyke of basaltic rocks known as the Falls. Immediately below these falls are the Queen's, Cole's and Australian wharves, extending for about a mile along the north bank of the river, and almost solely used by intercolonial sailing vessels and steamers, especially the colliers. On the opposite bank are ship repairing yards, foundries, and many other manufactories, there being also a large steam crane capable of lifting fifty tons from vessels berthed alongside. There are two railway stations in Melbourne, the Government station in Spencer-street, which is the starting place and terminus of all the up-country lines, and the Hobson's Bay Company's station, whence the suburban trains run. There are four fine theatres in Melbourne, the Royal, the Prince of Wales Opera House, the Academy of Music, and the Princess, the latter only opened occasionally. The Hospital is

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a commodious brick building in the centre of the town. There is also a Children's Hospital in the town, and another, the Alfred Hospital, at a little distance on the St. Kilda road, where are also the Blind, and Deaf and Dumb Asylums, all fine buildings. The Yarra Bend and the Kew Lunatic Asylums are on the outskirts of the city in the opposite direction. There are two markets, the Eastern and the Western, in the city, and in and about it lie several large recreation reserves and public gardens, of which the Botanical Gardens, about a mile distant, is the most extensive. Next to this is the Fitzroy Gardens, then the Royal Park, containing the Zoological and Acclimatisation Society's collection of animals, &c., the Flagstaff Hill Gardens, Carlton Gardens, and numerous other small reserves planted with trees. The Picture Gallery, at the rear of the Public Library, is a large building containing many fine paintings, water-colour drawings, and statues, and adjoining this is the Exhibition Building, first used with the original building for the Intercolonial Exhibition of 1865. Melbourne was erected into an Episcopal See in 1848, the present Bishop being the Right Rev. Bishop Moorhouse, and the Roman Catholic Archbishop being the Most Rev. J. A. Goold. Melbourne is amply supplied with newspapers, there being three daily morning papers, the *Argus*, the *Age*, and the *Telegraph*, with their weeklies, the *Australasian*, the *Leader*, and the *Weekly Times*. There is an evening journal, the *Herald*, and several other weeklies and monthlies, comprising, in addition to those named, the *Illustrated Australian News*, *Sketcher*, *Punch*, *Australian Medical Journal*, *Advocate*, *Australasian Insurance and Banking Record*, *Australian Journal*, *Christian Review*, *Church of England Messenger*, *Victorian Independent*, *Temperance News*, *Australian Jurist*, *Spectator*, *Melbourne Review*, *Australian Review*, *Southern Cross*, *Australian Trade Review*, *A.B.C. Travellers' Guide*, *Bradshaw's Guide*, and others. The suburbs of Melbourne, which are extensively and largely populated, are Emerald Hill, South Yarra, St. Kilda, Sandridge, Prahran, Windsor, Balaclava, Elsternwick, Richmond, Fitzroy, Collingwood, Carlton, Hotham, and North, East, and West Melbourne. Many of which have local newspapers, and most of which are connected with Melbourne by rail, or by lines of omnibuses, or cars and waggonettes

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with which Melbourne is plentifully supplied, and which are clean and commodious, and run at cheap rates. Taken as a whole, the city of Melbourne is a good place to live in whether for business or pleasure; it is still in the prime vigour of its youth, and for a city little more than forty years old may fairly be called one of the wonders of the world.

The second most populous town in Victoria is Ballarat, the centre of the western goldfields, and a most important and beautiful city, with fine wide streets and noble buildings. It is ninety-six miles from Melbourne, and is connected by rail. Ballarat (East and West) has an area of 7200 acres, and a population of 32,586, with 8046 dwellings. The estimated total value of ratable property is £1,097,481; the revenue, £35,204 5s. 8d.; and the expenditure, £29,961 8s.

Sandhurst, the capital of the northern goldfields, comes next, with an area of 7500 acres, a population of 26,927, and 7190 dwellings. The estimated total value of ratable property is £1,881,850, the revenue £25,505 1s. 5d., and the expenditure £21,495 2s. 4d.

Next in order of population, &c., comes the City of Collingwood—a suburb of Melbourne, with an area of 1241 acres, a population of 21,800, and 4889 dwellings. The estimated total value of ratable property is £1,095,080, the revenue £20,238 8s. 6d., and the expenditure £19,266 11s. 1d.

Geelong, the second seaport, has an area of 3100 acres, a population of 11,000, and 2200 dwellings, with an estimated value of ratable property of £703,920, a revenue of £14,198 11s., and an expenditure of £14,625 15s. 2d. It stands next in importance to Sandhurst, although in point of population, &c., it is below the metropolitan suburbs of Emerald Hill (24,500), Fitzroy (17,000), Hotham (14,600), Prahran (16,520), and Richmond (18,612), although including Geelong West, a separate borough, it would be above some of them.

Following these places may be ranked in importance Castlemaine (7500), Stawell (8000), Eaglehawk (7757), Clunes (5639), Daylesford (4351), and Ararat (3000), all mining townships; Williamstown

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(7800), Warrnambool (4600), Portland (2400), and Belfast (2200), sea ports; and Echuca (3695), the port of the Murray River trade, and next in order the other suburbs of Melbourne, and the numerous country towns, villages, and agricultural settlements.

The total number of cities, towns, boroughs, and townships, large and small, in the colony is at present about 600, but others are continually springing up in various parts, as agricultural settlement goes on, and new townships are surveyed and proclaimed. It is not necessary to give a list of all these places, and the pursuits with which they are connected; sufficient to say that nearly half of them are wholly agricultural, about one-fourth of them wholly mining, and the remaining fourth grazing, agricultural and grazing, or agricultural and mining, and commercial.

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CHAPTER XIII.

GOVERNMENT, LAND FORCES, NAVY, POLICE, etc.

THE form of Government by which Victoria is ruled is practically the same as that of Great Britain, the only difference being that the Royal power is here delegated to a viceroy. Bound by the same regulations, and conforming to the same authority, Victoria has her Upper and her Lower Houses of Parliament, corresponding in almost every particular, except, perhaps, that of the privileges of Peers, with the Houses of Lords and Commons in England. Both Houses in Victoria, the Upper being called the Legislative Council, and the Lower the Legislative Assembly, are electoral, the former being presided over by a President of its own election, and the latter by a Speaker, also of its own election. The officers of Parliament assimilate to those of the Houses of Lords and Commons, each electing its own Chairman of Committees, the Council having its clerk, assistant clerk, usher, and four messengers; and the Assembly its clerk, assistant clerk, serjeant-at-arms, and seven messengers. The Council is composed of thirty members, representing six provinces; and the Assembly of eighty-six members, representing fifty-five constituencies. (For qualifications of members and voters, see chapter XI.) The Executive Council is composed of the Governor and the Ministry for the time being, who are the heads of the various Government departments, and who control those departments, being responsible only to Parliament.

The functions of the Assembly are to inaugurate bills, and pass them in the regular form, of first and second readings, committee, and third reading, and then transmit them to the Council, who deal with them in the same manner, having the power of initiating, accepting, refusing, or altering all bills, except money bills, with which it is

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within the province of the Assembly solely to deal. The Council has, however, the power to refuse those bills *in globo*, but not otherwise, and the Governor has, after all, the power of veto, and also of granting a dissolution of Parliament. Before becoming law, all bills must be signed by the Governor on behalf of Her Majesty the Queen. The practice of Parliament is regulated by the rules laid down by May, as in the English Parliament, the certain standing orders being capable of suspension by the vote of the House. The privileges of Parliament are jealously guarded, the President and Speaker having power to call to the bar and commit to prison any person infringing them.

The practical working of the Government of the country devolves on the various departments, each of which is controlled by a Minister, and which are as follows:—

The Chief Secretary's department, comprising the audit of Government accounts, police, gaols, the mint, patents office, chief medical officer, school of anatomy, medical board of Victoria, lunatic asylums, friendly societies, national museum, botanic gardens, observatory, public library, museum, and technological commission.

The department of Education, or Public Instruction, including the statistical department.

The Treasurer's department, comprising public finance, Government stores and transports, payment and receiving of accounts, intestate estates, and the Government printing-office.

The department of Mines, comprehending all matters appertaining to mines, mining laws and regulations, and mining surveys.

Department of Land and Works, comprising the board of land and works, lands and survey, public works, sewerage and water, roads and bridges, and water supply.

Railway department, comprehending all matters connected with the Government railways and railway traffic.

Trade and Customs department, comprising roads and customs, ports and harbours, pilot board, steam navigation board, powder magazine, distilleries, and immigration.

Postmaster-General's department, including the postal and telegraph service of the colony.

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Law department, comprising the Attorney-General's and Minister of Justice's departments, law offices of the Crown, supreme court, insolvent court, vice-admiralty court, county courts, district courts, circuit courts, criminal sessions, police courts, coroners, notaries public, jury lists, and auctioneer's, publican's, and hawker's licences.

One of the fundamental questions with which the Government has to deal is, of course, that of revenue. Now the amounts of which the revenue may be said to be made up, are of two kinds, viz., those raised by taxation, and those raised otherwise. Of the former class are the receipts from customs and excise duties, from wharfage rates, port and harbour dues, tolls, business licences, and duties on estates of deceased persons. Of the latter class are the amounts derived from the sale or occupation of Crown lands, from railways, water supply, and other public works, from post and telegraph offices, fees, fines, and forfeitures, labour of prisoners, interest on the public account, &c. The revenue for the financial year 1876 was £4,325,156 9s. 1d., of which £1,780,391 17s. 3d. was raised by general Government taxation, and the balance by the public lands, works, &c., specified. The expenditure was £4,572,843 10s. 9d. To this may be added the revenue and expenditure of municipal government; the grand totals being,—revenue, £5,009,847 4s.; expenditure, £5,222,499 1s. 7d.; leaving a deficiency by expenditure in excess of revenue of £247,687 1s. 8d. From this, however, must be deducted £88,794 4s., surplus balance brought forward from 1875, leaving a net deficiency to be carried to the finance account of 1877 of £158,892 17s. 8d.

The public debt of Victoria, charged on the revenue of the colony, amounts to £13,996,823, and consists of two items, viz., £12,119,193 borrowed for railway construction, and £1,877,630 for water supply, defences, graving dock, and other public works. The average rate chargeable on these loans is about 4.8 per cent.

Pensions chargeable on the Government, not including police pensions, nor retiring allowances voted annually by Government, amounted at the end of 1875 to £26,276 17s. 1d., although only £24,795 4s. 8d. was actually paid. The pensions under the Civil

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Service Act are of three kinds, viz.:—retiring allowances, equal to half their salary to officers of not less than ten years' service, being sixty years of age; retiring allowances, equal to a sixtieth part of their salary for every year of service up to forty to officers of not less than ten years' service and sixty years of age; and retiring allowances equal to a sixtieth part of their salary for every year of service up to forty to officers not having attained the age of sixty, who should be compelled to retire in consequence of infirmity of mind or body.

The Land Forces of Victoria consist of a paid artillery corps and naval brigade, which was formed under the Discipline Act 1870 (34 Vict., No. 389), on the withdrawal of the detachment of the Imperial troop, formerly stationed in the colony; also of a volunteer force of various arms, established under the Volunteer Act 1865. The men of the paid artillery, or local defence force, if of good character, are drafted off into the ranks of the police and of the warders of gaols as vacancies occur. In the period between the 1st July, 1870, and the 30th June, 1875, there were 190 men so drafted, and the cost of the corps to the colony during the same period was £44,545. The following is the strength of the local defence force:—Officers, 2; sergeants, 5; rank and file, 130; total, 137.

The Volunteer Force of Victoria is a fine body of men, and its members have shown much zeal in rendering themselves effective. The total establishment authorised is 4015, consisting of 6 troops of cavalry, 10 corps of artillery, 1 corps of engineers, 1 torpedo and signal corps, and 13 corps of rifles. The strength of the volunteer forces at the end of 1875 was—*Cavalry.*—Officers, 31; sergeants, 24; troopers, 196; total, 251. *Artillery.*—Officers, 60; sergeants, 68; gunners, 1299; total, 1447. *Engineers.*—Officers, 5; sergeants, 7; rank and file, 102; total, 114. *Torpedo Corps.*—Officers, 4; rank and file, 21; total, 25. *Rifles.*—Officers, 65; sergeants, 97; rank and file, 1552; total, 1714. Grand total.—Officers, 165; sergeants, 116; rank and file, 3170; to which must be added 109 supernumeraries.

In addition to these there were 64 staff and unattached officers, and 38 unattached sergeants, with 100 bandsmen, bringing the grand

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total of volunteers to 3551, so that the aggregate strength of all the volunteer corps was 464 short of the establishment, or 355 short if the supernumeraries be added to the number of the regular corps.

The following arms were in possession of the land forces :—Garrison guns, 6 muzzle-loading rifled 9-in., 25 muzzle-loading rifled 8-pounders, 30 smooth-bore 68-pounders, 38 smooth-bore 32-pounders. Guns of positions, 6 breech-loading Armstrong's rifled 40-pounders. Field guns, 6 breech-loading Armstrong's rifled 12-pounders; 6 breech-loading Armstrong's rifled 6-pounders; 6 muzzle-loading rifled Whitworth's 3-pounders; 1 smooth-bore howitzer 24-pounder; 9 smooth-bore howitzers, 12-pounder; 2 guns, 6-pounder; total, 135. Some of these guns are, however, of obsolete patterns, and some otherwise unserviceable for defence. The rifles in possession of the land forces were :—Breech-loaders, 131; long Enfield, 573; Lancaster large bore, 1234; Lancaster reduced bore, 1800; General Hay, 322; pattern unstated, 147; total, 4147.

The Naval Forces consist of the ironclad turret-ship *Cerberus*, of 235 feet long and 2107 tons register, and the wooden line-of-battle ship *Nelson*, of 220 feet long and 2736 tons register; also, of a Naval Reserve, the men of which receive a small fee as a retainer. The *Cerberus* has 6 officers, and a crew of 36 petty officers and seamen, and 40 boys—total, 82; and the *Nelson* 5 officers and 32 petty officers and seamen—total, 37. The Naval Reserve consists of 9 officers and 216 petty officers and seamen—total, 225. The *Cerberus* carries 4 Woolwich 10-inch 400-pounder guns; and the *Nelson* 2 Woolwich 7-inch 116-pounders, 20 shunt guns (45 cwt., 64-pounders), 20 smooth-bore (32-pounders), and 6 howitzers (12-pounders)—total, 52 guns. The small-arms in possession of the naval forces are—50 Martini-Henri rifles, 226 Sea Service rifles, 43 Enfields, 18 General Hay's, 24 Deane and Adams's revolvers, and 119 undescribed revolvers—total, 480.

The military expenditure during 1875 amounted to £36,372 16s., and the naval expenditure to £17,104 12s. 2d., a total of £53,477 8s. 2d.,—the amount expended on defences generally, including buildings and works of defence, during the last twenty-one years being £2,073,874.

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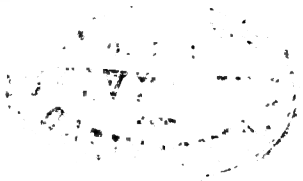
During the present year, Sir William Jervois and Colonel Scratchley—two eminent military engineering authorities—have made a rigid examination of the defences of Port Phillip, with a view of so altering the old or constructing new fortifications as to render them capable of repelling an invading fleet, and immediate steps will be taken to act on their valuable recommendations and suggestions.

The Police Force of Victoria is a body of men of whom, whether for appearance, physique, or knowledge of their difficult and often delicate duties, it is impossible to speak too highly. The force (which numbers about 1050), is divided into two sections—the foot and the mounted police, or troopers. The former are engaged principally in the large towns, and the latter in the country districts, except a few who are stationed in Melbourne, and who are told off for occasional special duty in the suburbs. The cost to the colony for police was £199,737 13s. 1d. in 1876, during which year the cost for gaols and penal establishments was £61,051 4s. 7d., a total of £260,788 17s. 8d. for the detection, repression, and punishment of crime in the colony. Under a recent system, the police and gaol warders are drafted from the strength of the local defence force, who enter on their duties therefore with some knowledge of them, and without having to undergo the necessary drill, &c., before being ready for active service.



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CHAPTER XIV.

GROWTH OF THE COLONY — THE RISING RACE, NATURALISATION—CONCLUSION.

"WHAT great events from trifling causes spring!" A generation has passed away since the small craft, so aptly named the *Enterprise*, was moored to a tree at the foot of a grassy hill on the banks of the Yarra Yarra River, and since the little association of seventeen souls landed in August, 1835, on the site where was so soon to spring up the now magnificent city of Melbourne. The hill, first called Pleasant Hill, and then Batman's Hill, has disappeared; one by one the members of that little band of hardy pioneers has gone from the scene of his labours to join the "great majority," but that handful of people has widened out into a nation.

The wilds, untrodden by human foot, save that of the dusky savage, who roamed unmolested through the bush in search of food, have given way before the axe of the woodman, and the spade of the settler. The country has been reclaimed, and what was once a dismal solitude, a desolate wilderness, now echoes to the unceasing sound of busy life.

The newly found country did not lack long of people. Already the Hentys had settled with their flocks and herds at Portland Bay, but it was not until the public mind was awakened to the advantages of the Port Phillip district as a new field of enterprise and settlement by the adventurous zeal of Batman and Fawkner in 1835, and of Major Mitchell in 1836, that many ventured to the unknown country. In May, 1836, the seventeen had already swollen to 177 (including the settlement at Portland Bay), 142 males and 35 females; by November of the same year the number was 186 males and 38 females—224 in all; but in September, 1838, there were 3080 males and 431 females, a total population of 3511

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persons. Settlement went on slowly until the gold fever set in, when in April, 1854, there were no fewer than 236,798 persons in the colony, and thenceforward the increase has gone on rapidly until at the end of 1876 there were no fewer than 830,679 persons, comprising 451,134 males, and 379,545 females, the result partly of natural increase, and partly of immigration.

Many of the present inhabitants of Victoria, as is well known, have found their way hither from other parts of the world, and the relative proportion of different nationalities has naturally changed from time to time with the varying streams of immigration. The English-born were, however, foremost in the list of nationalities at every census-taking until that of 1871, when they were found to be more than doubled by Young Australia. In 1846 there were 9126 Irish-born, and 4225 Scotch-born, to 10,100 English-born. In 1851 the numbers had changed to 14,618 Irish-born against 28,908 English-born, or scarcely a half, and in 1861 the same proportion was found to exist. In the latter year the Scotch-born were little more than a third of the English-born, and in 1871, the date of the last census, the Irish-born were found to have gained on the English-born, and stood in the proportion of three to five, and the Scotch-born were rather more than a third of the English-born, while the Welsh formed a very small proportion of the whole population, less than 1 per cent. only.

Foreigners, on the other hand, were in the proportion of 5 per cent. of the total population, but out of the 37,315, which was the sum total of foreigners, 17,826 were Chinese, or one in every forty-one of the population. The next most numerous race were the Germans, who numbered 9264, or one in seventy-four. The Americans numbered 2423, and the French 1170.

In that year, Victorians born numbered 329,597; natives of other Australian colonies and New Zealand, 28,669; English, 164,287; Welsh, 6614; Scotch, 56,210; Irish, 100,468; other British possessions, 3870; French, 1170; Germans, 8995; Austrians, 269; Belgic, 128; Danish, 1014; Dutch, 341; Italian, 772; Norwegian, 395; Polish, 214; Portuguese, 197; Russian, 334; Greek, 146; Spanish, 135; Swedish, 845; Swiss, 1240; Turkish, 10; American (United States),

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2423; Chinese, 17,857; other countries, 315; born at sea, 2064; unspecified, 2999. Total on the 2nd April, 1871, 731,528; since when no record of nationalities has been kept.

An important change of type is continually going on by process of marriage. There are, as every one knows, distinctive characteristics in the general appearance, physique, and character of English, Irish, and Scotch people, the result of difference of origin, of temperament, climate, soil, occupation, social institutions, laws, religion, and of being kept apart. But the old barriers have been broken down by the alliances which are every day powerfully cementing the three great peoples named, so will another national type be developed in the shape of an Australian people whose destiny it may be to show that, as they are the latest, so they will prove the wisest, best, and happiest among the nations.

There has always been a disproportion in the number of the two sexes in Victoria, although it is, of course, not so great now as it was in the earlier days of the colony; for example, in 1838, there were only 431 females to 3080 males, while in 1876 it is estimated that there are 383,837 females to 456,463 males. The greatest equality naturally exists among the Australian born. In 1871, there were 178,385 females to 179,881 males. Among foreigners, the French showed 37 females to 100 males; Germans, 35 females to 100 males; and Chinese, only 1 female to 575 males. Statistics show that the nationalities are rapidly being forced, and that ere long the distinctions of race, as they exist with regard to the present generation, will be to a great extent disregarded, if not unknown.

There is a home for all races, all creeds, all tongues, in her midst, who will be content to be, not English, or Irish, or Scotch, French, Italian, German, or what not—but Australians, as certainly their children will be after them. And to become Australian is easy. There is no prejudice here, no jealousy of foreigners, no obstacle in the way of their success. They enjoy equal rights, privileges, and immunities with the British or the native born. They can, by becoming naturalised, have the same voice in matters of State, occupy the same position in the councils of the nation. Foreigners residing in Victoria may obtain letters of naturalisation on taking an

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oath of allegiance to the Crown before any judge or police magistrate, as prescribed by an Act of the Legislature (26 Vic., No. 166). But without becoming naturalised, alien friends resident in the colony may acquire real and personal property, and may hold, convey, devise, and bequeath it in the same manner as if they had been natural-born subjects of Her Majesty. Alien women being married to British subjects thereby become naturalised. The number of foreigners naturalised during the last eleven years, that is to say from 1866 to 1876 inclusive, is 1034, of whom 116 were naturalised during the latter year. Of these 1 was Austrian, 1 Belgic, 2 French, 3 Dutch, 4 Italian, 16 Prussian, 49 from other German states, 32 from other European countries, 3 American (U.S.), and 5 Chinese.

Victoria, a country of no nationality save her own, which is made up by a fusion of them all, invites all nationalities to her shores. Not as visitors for a season, but to come in as her adopted sons and daughters, and share in the riches which her grateful soil affords to those who will but till it. Thousands have already found peace and plenty in her bounteous lap, but there is yet room, not only for thousands, but for hundreds of thousands. And not only room to live, but the means to live in comfort, to thrive and become prosperous citizens and denizens of this "new earth under a new heaven."

To the crowded marts and hives of industry in Europe, where men, and women too, crowd, and toil, and sometimes starve in the struggle to get bread, hopeless of rising, despairing of anything beyond; to the broad acres where weary farm labourers vegetate through life, without a thought of mending their condition, unceasing labour from youth to manhood, and in old age, the workhouse; to the sunny slopes and wide champagnes of France and Germany, and the vine and olive-clad hills of Italy, where the peasant lives and dies content if for his toil he can earn his black bread and soup; to the artisan, the farmer, the small capitalist, the vigneron, the sericulturist, the labourer, she cries: "Come, here is plenty and to spare, come, bring with you your strong arms, your stout hearts, your skill, and your knowledge, bring with you your wives and little ones, for I have need of you all."

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CHAPTER XV.

THE PASSAGE OUT.

In these days of rapid travelling the voyage to Australia may be looked upon as little more than a pleasure trip, for the passage is frequently made in little over forty days, and, except a little knocking about off the Bay of Biscay and the Cape of Good Hope, is generally a fine one, it being no unfrequent thing for passengers to declare that the sea for the greater part of the run has been "as smooth as a millpond"—a slight exaggeration, perhaps, but, in the comparative sense in which it is used, quite true.

The means of transit are numerous, and such as will suit all classes of the community. From the stately floating palaces—the mail ships—which ply from Southampton, *viâ* the Mediterranean and Red Seas and the Indian Ocean, to the fast-sailing clipper ship, there are all classes, all sizes of vessels engaged in the Australian trade, but on all the accommodation is ample, the provisioning good, and the health and comfort of the passengers strictly and carefully considered.

The best-known lines of regular traders from England to Victoria are, first of all, the Peninsular and Oriental line of mail steamers, the passage rates in which are rather high, and only suited to the means of wealthy persons or those whose business compels them to travel in a hurry; the fares are from £40 to £88. Next come the steamers of the Pacific Mail Steam Navigation Company; the *Lusitania*, the *Chimborazo*, and *Cuzco* (which make the outward passage in from 36 to 40 days); the *Whampoa* and the *St. Osyth*. Money Wigram and Sons' line of steam and sailing ships comprises a number of well-known vessels—the *Durham*, *Northumberland*, *Kent* and *Somersetshire* steamers, and the *Yorkshire*, *True Briton*, *Hampshire*, *Essex*, and *Lincolnshire* sailing packets. The rates of passage money are:—By steamers, saloon, 55 to 70 guineas; second-class, from 25 to 30

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guineas; third-class, 18 to 22 guineas; steerage (for single men only), 15 guineas. By sailing vessels, saloon, £47 10s. to £52 10s.; second cabin, £22 to £25; third cabin, £18 to £20; steerage, £14; a reduction of about 10 per cent. being made for families, &c. Besides this there is the old-established Green's Blackwall line of fine sailing ships, and best known of all, perhaps, the celebrated Black Ball line, of which the *Great Britain*, a vessel that has made more runs and brought more passengers to Melbourne than any other ship afloat, is one. The Aberdeen line of clippers, the Orient line of steamers (just started), all of which run regularly with passengers, and the Colonial, White Star, Victoria, London, Thames, and Mersey lines, which although not composed strictly of passenger ships, still afford excellent accommodation to all classes of passengers. The fares in each of these lines of vessels are about the same, namely, from £14 to about £50, according to accommodation, and, in fact, Money Wigram's prices may be taken to fairly represent the whole. The dietary arrangements for all classes of passengers are on a liberal scale, and amply sufficient in quantity, and good in quality, for the requirements of persons of all grades.

Besides the Peninsular and Oriental line of mail steamers, there are also two other mail lines, one *via* America, New Zealand, and New South Wales, known as the Californian service; and one *viâ* the Mediterranean Sea, Suez Canal, Singapore, Batavia, Torres Straits, and Queensland, known as the Eastern and Australian Company's Service. These are, however, little used by ordinary passengers, the routes being more expensive than the others.

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PURE NATIVE WINE

CONSIDERED AS

AN ARTICLE OF FOOD AND LUXURY,

AND THE GROWING OF IT AS

AN INDUSTRY ADMIRABLY SUITED TO SOUTH AUSTRALIA.

A PAPER

READ BEFORE A MEETING OF VINEYARD PROPRIETORS AND OTHERS INTERESTED IN COLONIAL WINES, ON 12TH DECEMBER, 1867,

At the South Australian Institute, Adelaide.

WITH PREFACE.

BY THE

VERY REV. JOHN J. BLEASDALE, D.D., F.L.S.,

HONORARY MEMBER OF THE MEDICAL SOCIETY OF VICTORIA, ETC.

ADELAIDE:

PRINTED BY ANDREWS, THOMAS, & CLARK,

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PREFACE.

SHOULD this short paper on *pure native wine*—briefly considered in some of its aspects as an article of daily human food, as well as an agreeable stimulant and intensifier of the sense of enjoyment of life, and also as an industry admirably suited to the soil and climate, or rather the exceedingly various *soils* and *climates* of South Australia—fall into the hands of any one unacquainted with the circumstances which gave occasion to it, I may remark that a large number of the principal wine-growers of South Australia honoured me some months ago with an invitation to "pay them a visit, and offer them any remarks and observations on wines, that I thought judicious, and in such way as should appear most agreeable to myself." During my visit I had the honour and pleasure of meeting large numbers of the wine-growers in public on several different occasions, and of addressing them and conferring with them; and I take this opportunity of stating that I was everywhere received with lavish courtesy, and that in every instance where I visited a vineyard or cellar no information that I asked was withheld. As the very limited time at my disposal prevented me from visiting every single vineyard within a radius of forty or fifty miles of the capital, I made it my aim to see and thoroughly inspect what I considered to be fair representatives of the produce and productiveness of each district. I was the better able to do this by the courtesy of the head of the

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Railway Department, who made me perfectly free on the Railways during my stay; and the kindness of private friends, like Mr. Daly, who drove me in his own carriage through the most interesting wine districts of the north, and afforded me a sight of vineyards I should otherwise not have obtained.

In the course of these pleasant journeys, I learned to my satisfaction the immense difference there is everywhere between the wines of the Hill country and those of the Plains. The samples of South Australian wines from the Hills, nearly all of a light firm character, seen and examined at the late Intercolonial Exhibition, had appeared to me rather as happy exceptions to a general rule of strong full-bodied wines, than as the normal produce of vast districts of magnificent vine country. Hence it was that I advised strongly that the distinction should be made on every label, as "Wine of the Hills" or "Wine of the Plains," according as it was produced on the Hills or the Plains. Such a distinction is simple, easily understood, and will I believe be of much use in assisting selectors, whether for a market or private consumption. For in a distance of five miles, in some places, there is all the difference in the produce that we recognize between a dry Rhenish wine and the strongest Burgundy or pure Port or Sherry.

I would repeat in this place that the two points at which the South Australian wine makers must labour are: 1. To keep their wine from becoming too strong with natural spirit—I mean spirit produced by fermentation; and, 2. To study *blending*, especially in the case of red wines.

With reference to the first, viz., the over-spirituosity, I will recommend the subjoined extract from a recent number of the *Lancet*, as expressing a most valuable opinion: and with regard to the second, I may mention the fact that but

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few of the blended wines obtained distinctions in the late Intercolonial Exhibition, and fewer still *kept well*:—

EXTRACT FROM THE "LANCET."

"On the general wholesomeness of light wines, and especially of the clarets and Burgundies, and other red wines of the same class, it is now scarcely necessary to insist: the fact is nearly universally admitted, and to it nearly everybody can add the testimony of his own daily experience. Good sound claret rarely, if ever, produces headache, fever, thirst, or an overstrained nervous system; it just stimulates the appetite, and promotes, in place of disordering, digestion; it raises, in fact, gently, and within normal bounds, the functions of the body, innervation and circulation. We believe also that the majority of the Burgundies sold are equally wholesome, and we found this belief mainly on the results of the analyses we have given, and which show such small differences in the composition of the two classes of wine that it would not be possible to assign any reason, derived from their composition, why the one class of wines should be wholesome and the other injurious.

"The fact of the wholesomeness of these light red wines is now, as we have said, pretty generally admitted; but how comes it that they are so much more wholesome, so much better tolerated by the stomach? We believe that the explanation of the wholesomeness, or the contrary, of any wine is to be found, in the main, in the quantity of alcohol present therein; and that the unwholesomeness increases, as a rule—to which there may be some exceptions—with the alcohol. We would not, however, be understood as stating that the effects stand in any very exact relation to the amount of spirit, since no doubt those effects are modified to some considerable extent by the other constituents of the wine; there is no doubt that more alcohol can be taken when associated with the components of wine than when mixed only with water. In our view of the matter the strong wines cannot be drunk in any quantity without producing marked physical effects upon the delicate lining membrane of the stomach itself, irritating and corrugating it, and provoking it to throw out acid and morbid secretions. Most of the port and sherry sold in this country contains spirit enough to preserve the dead human stomach for years from decay, if immersed in it—a fact which alone will serve to show the alcoholic potency of these wines."

JOHN J. BLEASDALE, D.D.

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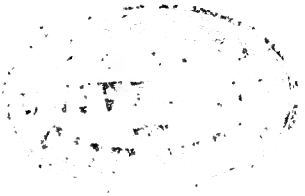

PAPER

READ BY DR. J. J. BLEASDALE BEFORE A MEETING OF WINEGROWERS AND OTHERS INTERESTED IN COLONIAL WINES, HELD ON THURSDAY, DECEMBER 12, AT THE SOUTH AUSTRALIAN INSTITUTE.

The HON. JOHN MORPHETT, President of the Legislative Council, in the Chair.

MR. CHAIRMAN AND GENTLEMEN—I have the honour to appear before you to-day in acceptance of a very flattering invite given so far back as last August, but which the many duties of my calling prevented my responding to at an earlier period; and especially in accordance with that portion of it where it is said "an opportunity will be afforded to you to impart, in your own way, such information as you may please to give on the interesting national enterprise in which, as you are aware, vast sums of money have already been expended in this colony." I thank you for the forethought and courtesy of leaving me to impart, in such way as I think I most satisfactorily can, any hints which my acquaintance with wine matters, my actual observations on South Australian wines, and the information afforded me by individuals among you, cause me to consider of present importance in advancing the manufacture and general use of pure wines.

Wine is a very compound fluid. Among its principal constituents—such as are always present in it—are water, spirit of wine, tannic acid, tartaric acid, phosphoric acid, racemic acid, sugar, an oxide of iron, and potash, with generally a small quantity of lime. These are the principal, but by no means the only ingredients of pure wine. The bouquet, as it is called, is a true æther, and is formed by the action of the acids on the alcohol in a nascent state and the flavouring principle of the grape, from which each distinctive bouquet

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is derived. The iron, potash, and lime are taken up from the earth; the elements of the acids, sugar, alcohol, &c., from the air and water. A glass of genuine wine contains a varying quantity, generally about one-fifth or a little more of its bulk of proof spirit, and four-fifths of water. The proof spirit, however, in the case of wine differs widely in its action on the human system from so much distilled spirit and water; for in wine it is not a mere mixture, but a combination, and it stands in chemical relations with the tannic and tartaric acids and the iron. Tannic acid is a powerful astringent and tonic, whilst tartaric acid, combined with potash and iron, has its own peculiar action on the human economy. It is evident, then, that wine must be slowly digested before it can get into the general circulation. And it is also plain that it more nearly resembles the nicely-adjusted prescription of a physician than aught else. And it is a prescription prepared by the Greatest of all Physicians —not alone as a restorative or alterative for the deranged functions of the body, but one meant primarily to strengthen and promote the well-being of the healthy frame, and at the same time intensify the sense of enjoyment of life. It is both an element of food and a luxury. Had I time, nothing would be more pleasing to myself than to illustrate by examples the wonderful and merciful providence of God in maintaining His creatures in existence, health, and comfort through every zone from the equator to the poles, supplying them with whatever is needful under the very altered conditions in which their existence has to be carried on. What animal fat and oil, clothing of skins and feathers, are to the Laplander; what his starch, no matter whence derived, and his almost naked skin, is to the equatorial African; what his bitter beer is to the inhabitants of northern Europe—that is wine, and a moderate quantity of animal and vegetable food to the inhabitants of sub-tropical climates all over the world. Again, if time allowed, it would be delightful to take up the line of illustration so exquisitely drawn by Mr. Babinet, of the Institute of France, and trace the action of Providence in the wool, hair, feather, skin, and other integuments of animated nature in the several zones. But we can do

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no more now than allude to it. And so, if we reason consecutively, we shall find that every climate has its own appointed conditions, under which alone the human economy will be healthy and vigorous. You cannot here subsist on the starch food which maintains in health and strength the inhabitants of equatorial regions; nor can you think of sustaining life for any length of time on the fish-oil, tallow, and dried flesh of the Laplander or the man of Kamsckatka. The beers and ardent spirits, so much a necessity in moderation in cold and damp regions, and the strong tea of China, when taken constantly and in excess, produce diseases here on which learned physiologists become eloquent, and from which are derived in no small degree the need of the physician, and the waste of health, and the expense of sickness, to say nothing of the miseries of declining life. Health depends much on the vigorous tone of the nervous system —the enjoyment of life wholly—and on that great instrument in the human laboratory—the liver. Tea and such like act strongly on the nervous system, but are comparatively harmless. Malt liquors and ardent spirits load the system with carbon—well enough for the production of animal heat, but not needed here, since the atmosphere supplies it abundantly. When the temperature is not low enough to demand a large supply of carbon to maintain animal heat, then, as the carbon must go somewhere and be got rid of somehow, the liver and kidneys have to do the work, when they are perhaps already overworked. I trust I am neither a theorist nor a quack. Had I been suspected of being either one or the other, my much-respected friends of the Medical Society of Victoria would never have conferred on me the distinctive honour of life-membership. I hate quackery of all kinds; and my education has long taught me that theories are worth little more than that they serve to arrange and harmonize a certain number of facts. The fact in this case is that liver and kidney diseases, nearly unknown in wine-drinking countries, are almost universal in these colonies, and either form the basis of prevailing diseases, or are complicated with them. Beer and spirits have their work to do in cold and damp climates, not in such as ours—

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intensely hot and dry. In a paper read some time ago before the Royal Society of Victoria, I said :—"Again, during eight of the above years I was constantly engaged with investigations, chemical and histological, sometimes for myself, at others for members of the medical faculty, and for the General Hospital, and had constant access to the laboratory of the late Government Analytical Chemist, for whom I performed for several years very nearly the whole of the microscopic and histological work. I thus had opportunities which few non-medical men have had in this country of witnessing the ravages made by ardent spirits on the human constitution. Peculiar forms of liver and kidney disease; fatty degeneration of the softer viscera; molecular changes, such as softening of the brain and insanity—these are a few of the more prominent rapid consequences of habitual spirit-drinking in this warm dry climate, as presented to the student of disease. When to the above catalogue, which affects primarily the drunkard himself, you add all the ruin and misery of a family, the wretched home, and starving neglected children, you arrive at something like what used to be daily and hourly before the eyes of a minister of religion in this new country."

With so much now said by way of general introduction, I will proceed to deal with your wines, and offer you such observations upon them as have occurred to me, either in my previous course of study of them, or since I have had the pleasure of seeing some of your large cellars and forming my own ideas on the spot. In the first place, then, I would remark that I have noted in very many instances the marked superiority of your young wines—those of the last two years —over the older samples. I make the remark in general terms, for I have tasted aged wines that were simply magnificent, fit for the tables of kings. Again, among the young wines, the whites were generally sounder and fuller of promise than the reds. Can this marked improvement be attributed to a better system of making, or is it an accident of favourable years? Or is it that all the wines appear, and in fact are good at first, but fall off, especially the red ones, before they attain full age? In the case of the sweeter

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varieties, or those which nature intended to hold a good deal of their natural sugar for a considerable time, the solution of the difficulty seems easy. The cellarman had been in too great a hurry to get them clean and dry—saleable in fact. Racking and fining had done their work till the wine had nothing to feed upon. Certain it is that I could not help observing in many instances a want of firmness in the older samples, and that peculiar sweety sour taste so characteristic of the earlier stages of change. It is true, I found nowhere any very large amount of wine older than 1865. These young wines, again, were in all instances, save one or two, which would have to be put down as exceptions in any case, far too full of natural spirit. I believe they had not been fortified—only the very ripe grapes had been fermented down till all the sugar was converted into alcohol. Yet there was something about them that told you they were not yet what we call "dry wines." I believe I am quite safe in stating that wherever the produce of a vineyard has shown a rise above 18 or 19 per cent of proof spirit in the wine when six months old, in future the following course should be adopted, viz. :—When the saccharometer falls to 5 above 0, which may be looked for according to temperature and the larger or smaller quantity of the fermenting must about the third, fourth, or fifth day, throw in about 2 or 3 per cent of spirit, about 20 or 30 overproof; and when the must has cooled, say next day, fill the vessel to within four gallons of its full capacity, and cover the bunghole with thick rough cloth. The immediate effect of this is to fix and throw down a large quantity of the vegetable albumen—that nitrogenized substance without which fermentation cannot proceed. By this means you keep a deal of the natural sugar for the wine to live on, and you prevent it from becoming over-spirituous, as a matter of course. I have no hesitation in saying that most, if not all, your wines are too full of spirit. I do not mean that they are "brandied" or "fortified" artificially. Nothing of the sort. Any little spirit you add after the wine is set is not worth naming. You have followed the guidance of the saccharometer too closely, and you have been aiming at getting your young wines to appear dry at as early a stage as

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possible; and the result is, from the vast sweetness of your grapes, an almost unexampled quantity of naturally-produced alcohol. The following twenty-one samples have been distilled by myself since I have been among you, and they represent the produce and methods of manufacture of districts wide apart. They are far ahead of the pure wines of Spain and Portugal in point of spirit :—

	Absolute alchohol.	Proof spirit.
Mr. Jacob's—		
White (Pineau?)	18·8	31·0
Do. Silvania, No. 1	17·0	28·8
Do. do. No. 2 (6)	16·5	27·7
Do. do.	14·1	23·7
Mr. Auld's—		
Red	13·9	22·6
White (old)	12·4	20·8
Mr. Peake's—		
Pure Riesling	—	27·1
Do. Grenache	—	28·2
Palomino	—	25·8
Clarendon White	—	20·8
Temperano	—	30·5
Do., and another sample	—	26·0
Smith & Son's—		
Yalumba Sherry (1864)	17·0	28·8
Do. do. (1866)	15·5	26·0
Do. Verdeilho (1863)	15·5	26·0
Adelaide Club Wines—		
Peake's Riesling	16·5	27·7
Glen Para White	14·8	24·0
Highercombe...	15·7	26·0
Mr. Gillard's—		
No. 5. Red Mataro and Black Portugal, 1865	18·0	30·5
No. 4, Scyras, 1866	17·4	29·0
No. 4, Frontignac	14·5	24·3

I need hardly say, gentlemen, that I am not here to teach you the elements of winemaking. I take it for granted that you know the ordinary details, and your successes and failures have shown you where the dangers mostly lie. I will, however, qualify what I have just said about the use of alcohol to check fermentation and preserve the sugar at a certain point, so far as this—your palates and judgments of flavour must to some extent regulate the point at which the spirit is to be put in, as well as the exact quantity of it. It should

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not be less than two per cent. Red wines everywhere, and especially in Australia, need much study and care to make the best of them. For those of you whose vineyards are on high, poor, cold grounds, where the character of the produce, especially of the riesling and carbonet, seldom rise to 20 per cent of proof spirit, then of course the only advice I can offer is to keep your cellars as cool as you can, provided the fermentation is going on—say at 65° ; and if you had by you a small still like this, and could determine the amount of spirit already produced when your saccharometer has fallen to within a trifle of zero, you would have an additional circumstance to help your judgment. Obviously, in these cases you must avoid using any spirit, or it will interfere with any bouquet the wine would have. The much-prized bouquets of the finest Rhine wines and of those of the North of France are owing to the slow formation of æthers—the result of the action of acids on alcohol and essential oils in a *nascent* state. These are never produced when the fermentation is rapidly carried on and where much alcohol is produced.

Should you be curious to know the methods of winemaking in France (and this knowledge might be of real use to such as are managing vineyards like those I have last descanted upon), you will find it in abundance, and in a plain readable form, accompanied with sensible remarks, in a work just issued by Dr. Kelly, entitled "Winegrowing in Australia." I would add, as a word of advice to all whose vineyards are located in warm genial situations, to aim at making wines on the models of the best Spanish and Portuguese, and the early use of alcohol is one point generally to be attended to. The sherries and ports, brandied as they might be for the English market, rarely contain in their pure state more than 22 per cent of proof spirit. Yet the grapes are allowed to become quite ripe, and the amount of their natural sugar, as shown by the strength of the musts, is very great, and would make them as spirituous as yours are, when made from the same fruit. When two-thirds of the sugar has been converted into alcohol—and the sugar goes first—and while the last third is untouched, which last third consists of

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gummy matters associated with formed sugar, the spirit which is added kills, along with the ferment, many of those things which would in time become sugar and be broken up into alcohol. These fall along with the ferment and form the lees. When your Verdeilhos and Muscats have been brought to the perfection of the wines of Madeira and Lavradio; when your Rieslings have reached the acmé of Bucellas or Lisbon sweet and dry; when your Shiraz and Black Portugal or Donzellinho have reached the perfection of Colares and port, and your sherry wine have yielded stuff like Manzanillia and Pajarete, you may defy the criticism of the world. If it be true to say what one man has done another may do, there is no reason in nature why you should not achieve all this; for I have many a time over tasted as good pure wine of the character of the best produce of those countries as could be found in Spain and Portugal. I could mention a list of names, but forbear. I may add, however, that never yet have I tasted a bottle of South Australian wine of the precise character of either hock, Sauterne, Barsac, or Chablis; yet I have met with others that, in their own way, are perhaps more than their equals.

Another point in the after treatment of the fermented musts is fining. The English is not a language rich in wine terms, or else that word fining would have either been discarded or confined to a definite meaning. As it is now, we use it in two widely different senses—first, for the act of removing the roughness and bitterness out of wine, and rendering it soft and smooth for the palate, and for this purpose gelatine or albumen of milk is used; and second, for fining, *i.e.*, clearing wine from mechanical impurities, such as sediment and scuddiness, which can be done without using any chemical agent. Much good wine has been spoiled in a quiet way by the improper use of eggs or isinglass or gelatine, because these substances attack and remove the tannic acid. This tannic acid is one of the main elements, on the presence of which the durability of a wine depends. Its function seems to be to keep the alcohol from being oxidized. On the presence of it in large quantities depends much of the keeping power of the Rhine wines; and to the

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want of it, I fear, much of your red wines when over two years old shows signs of a want of stability and firmness.

I will now show you something in the way of demonstrative experiments upon this tannic acid, and will then try to make the very pretty bit of chemistry involved in the production of the change of colour clear to you.

EXPERIMENTS SHOWN.

a Action of tannic acid on albumen of egg.
b Ditto ditto on gelatine.
c Ditto ditto on persalts of iron.
d Ditto ditto on the iron of the wine, shown by saturating the free acids with alkali.

As to racking you must use your own judgment. Experience and the kind of market you are looking to must guide you in all that, only sulphur your casks well, after rinsing them with spirit, and keep them pretty well filled up, and the temperature of the cellar as equable as possible. I think the difference of a few degrees of temperature is a small matter compared with one uniform degree of heat.

Now a word or two on blending wines. Few wines in warm countries are made from one kind of grape, and fewer still are wholly unblended. In fact, blending is more than half the science and art of wine-preparing. It is by studying and discovering a blend that will take the market that the wine-treater can continue for ever to supply a wine of one given character. Cosens' brown sherry, or a given shade of Lisbon, sweet or dry, all of them good wines, could be supplied for ever; but it depends on judicious blending. If you mix the grapes before crushing, experience is the main thing. If you blend must or finished wines, the following hints will be of service. It is not enough merely to find two or three sorts that blended yield a result better than any of them taken singly, in your own opinion. After finding the due proportion to be employed, it is necessary to bear in mind that they want a bond—a connecting-link, a something to make them incorporate one with another—and that is effected by the judicious use of a little strong spirit, and a greater or less quantity, but never very much, of a substance called aromè or arropè. That brings the edges of them together, so to speak. That you may not suspect I am

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carrying this doctrine too far, I will give you the established formula for the preparation of the Englishman's claret. It is for a hogshead—39 gallons of Bordeaux, one gallon of brandy, 10 gallons wine of Rousillon. Rousillon is a strong, highly-brandied wine, made only in the hot South of France, and from Malbec, Mataro, and Grenache grapes, or a mixture of them. Claret has always been a favourite.

There is yet another point to be urged, and that is perfect cleanliness and sweetness about every cellar, utensil, bottle, cork—in fact, everything employed about the making and keeping wine. Only yesterday a friend asked me to taste a bottle or two of old and splendid wines. The first bottle of red was magnificent, six years old; the second, out of the same cask, corked with a bad cork, was, as to smell and taste, offensive. He then opened two of white of the same age, and with the same result; one would have sold by sample a thousand gallons, the other would not have sold one. Yet the only difference between them lay in the corks. A bad sour cork is sure ruin to the delicate taste of good wine. Plenty of slacked lime in fine powder is a capital thing both on the cellar floor, where the floor is not flagged, and placed pretty thick about the bung. Wine is as delicate as milk. Never trust it in contact with wood where you would fear to trust milk. The delicate properties of wine are as easily affected as those of fine butter. What shall be said then of the practice of kindling fires of colonial wood in cellars to ripen (?) wines by raising the temperature, while at the same time the whole atmosphere and every vessel becomes coated with the empyreumatic products of the combustion of eucalyptus wood?

And now—*Paulo majora canamus*—wines for the ladies. Somewhere about one-half of our population consists of the female sex, with tastes more delicate, and finer organization than ours. They need sweet wines—*vins de liqueur*. They detest what we think so fine—the dry, firm wines. They not only detest them themselves, but they are the most active enemies of the private consumption of colonial wines in families. "Please don't put my husband on to buy any more colonial wine; it is making him ill." "It will be the end of us all." "I never drink it. I can't. It is nasty, sour stuff."

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And yet this same friend of mine was never heard to find fault with sweet Muscatel or Aucarot. All that doctrine I was just now laying down about the use of spirit and aromè will be called into practice as soon as winegrowers remember that ladies have palates for sweet wines, but none whatever for the hard and dry. I place it on record as my deliberate opinion that the ladies are the very worst enemies at this day of the domestic trade in colonial wines, and perhaps you yourselves are the cause of it, because you have not sufficiently studied their palates in the manufacture of your wines.

The next important class of consumers of pure strong wines are the patients in any and all of our public institutions. In them, if anywhere, wine has a distinctive function —not Cette port and Hamburg sherry, nor any other deleterious compound of the worst of beetroot spirit, sloe-juice, damaged French prunes, and catechu, such as I have had the great gratification of turning out of Melbourne Hospital—but the article now in use there, with pleasure as well as sanitary advantage to the patients, an old strong red wine of the Malbec and Mataro character, with 26 per cent of proof spirit in it. The trash which was turned out—stuff looking rather like shoe-blacking, with a "sweety sour" smell on it—contained by my distillation, in the presence of several of the Managing Committee of Melbourne Hospital more than 40 per cent of proof spirit, and so bad! It had cost 10s. per gallon duty paid; the South Australian less than 7s. 6d. duty paid. If the physician considers that wine is indicated, then let it be wine; if a stimulant, then brandy, ammonia, &c. Surely trash of any smell, taste, or colour is never indicated. In sheer mercy to the poor among our Victorians we are making an effort to have them supplied with good sound wines, approved of by the Medical Society, at the cheapest rates, and guaranteed the same as the sample submitted to the faculty, every bottle bearing a label with the name of the wine, its age, the vineyard or district it came from, the special remarks of the faculty's judges, and its price. Should not as much be done here among yourselves?

At the risk of being tedious, I will call your attention to a few matters which have appeared both in the city and

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provincial papers of Victoria, touching the progress of introducing colonial wines into our public institutions. I cut the following out of a Warrnambool paper. I scarcely need say that the certificate of the honorary medical staff of the Benevolent Asylum will speak boldly for their experience in that large body of our poor, sick, and decrepit people:—

COLONIAL WINES IN HOSPITALS.

The question of introducing the colonial wines as a substitute for the so-called sherries and ports at present used in the above institutions is now occupying some public attention in the metropolis. The proposal has found favour with the Committee of the Melbourne Hospital, and also the Benevolent Asylum. In the *Argus* of the 7th ultimo the following letter appeared on this subject, under the signature of I. K. :—

"Sir—Through the courtesy of the Rev. Dr. Bleasdale, I had an opportunity this morning of tasting a number of colonial wines, chiefly South Australian vintages, which that indefatigable advocate of colonial wines has collected for purposes of comparison. I do not wish to say anything here about the merits of the samples submitted to the test as compared with high-class wines, or even fair dinner wines of Europe ; but one and all of those I tasted were in every respect superior to the so-called port wine which is in vogue in our hospitals, and as they are moreover much cheaper than the imported adulterated 'drug,' the patients would, or at least might, get the benefit of the difference in the price by being supplied with more wine than the available means at present allow of. Some connoisseurs may find fault with colonial wines for many reasons ; they may not suit their palates ; but if they possess any knowledge of wine besides mere taste for it, they cannot deny that the bulk of our colonial wines are a by far more wholesome drink, ay, and a more palatable one too, than the common red stuff which is sold as port wine, and which in most cases is but a mere wretched compound of which grape juice forms by far the smallest portion. The experiment of substituting colonial for European wines has been made in the Benevolent Asylum, where, I am told, it answers so far very satisfactorily. Where colonial wine is not considered strong enough, pure brandy should be given ; and if now and then a patient should prefer (fancies of invalids require often to be indulged) the time-honoured black-bottle stuff, it should be at hand, and be administered. Let the experiment be tried honestly for twelve months, and I am certain that the medical officers of the institution will report favourably of the result, and bad wines will be banished henceforth from the Hospital cellars. Dr. Bleasdale has recently received a very flattering invitation from a number of South Australian winegrowers to pay them a visit and to report on their produce. Should the rev. doctor undertake such a tour of inspection, I would advise the various Committees of

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Management of the Melbourne and provincial Hospitals to commission that gentleman to choose for them a suitable and inexpensive wine from among the many varieties which will come under his notice."

Since the foregoing was published, we are informed that the Melbourne Hospital Committee have procured a quantity of South Australian wines for the use of patients, and the following certificate has been given by the Honorary Medical Staff of the Benevolent Asylum :—

"Melbourne, August 27, 1867.

"We the undersigned, members of the Honorary Medical Staff of the Melbourne Benevolent Asylum, certify that for the last five months we have prescribed colonial wine for the inmates in all cases where the use of wine was indicated, and that we find it infinitely preferable to the port and sherry ordinarily employed for Hospital purposes. We feel it a duty to recommend its general employment in all charitable institutions.

"S. D. Bird, M.D.
"James Edward Neild, M.D.
"A Gray, Surgeon.

"We would suggest that the Committee of the Warrnambool Hospital should try the experiment; and if Dr. Bleasdale be communicated with prior to his intended visit to Adelaide, he would be only too happy to obtain a supply for our local institution."

The teetotallers and other consumers of cordials, such as ginger wine, pure green ginger cordial, cloves, raspberry wine, &c., deserve a kind word in this place—at least, I trust it will not be out of place. With the exception of raspberry vinegar—generally as supplied a compound of a doubtful character, and certainly but rarely prepared, as it ought to be, with raspberries, vinegar, and sugar only—few, if any, of these cordials are prepared without a very large share of strong spirits. Out of three samples got haphazard yesterday, one "raspberry vinegar," one "ginger wine," and the third "cloves," I found on distillation no spirit in the raspberry vinegar, but in the cloves 11·0 absolute alcohol, or 18·4 proof spirit per cent, and in the ginger wine 17·4 absolute alcohol, or 29·3 proof spirit. The spirit contained in these samples was excellent. I have carried my researches into these compounds, which are mainly consumed in Victoria, by teetotallers and women who honestly believe there is no spirit in them, to an extent that I can only just allude to at present. But this I will say, that the articles of local manufacture, whether here or in the sister colony, are vastly

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superior to any imported ones I have examined. The chief difference lies in the comparative fineness and purity of the spirit employed. After my return I hope soon to lay these investigations before one or other of our learned societies, when you will probably hear something more of them. They all contain what I consider a scandalous quantity of strong spirit, of which the consumers know little or nothing, unless they guess from their headaches and flatulency that all was not quite right the previous evening.

How much better to take what nature demands, and take it in moderate quantities, of wholesome wine. Wine-drinking never made drunkards. I lived many years in a great city on the Continent of Europe where wine was the universal beverage of all classes and both sexes, but never saw a native of the country intoxicated. I would not spend an hour of my time on all the wine in Australia if I did not believe it, with the deepest conviction, to be the one natural remedy for the beastly drunkenness still so common in our Australian populations.

These, gentlemen, are some of the aspects under which I elected to criticise wines, wine-making, and curing in South Australia; and with these, as the first steps towards rendering your wines sound and good and universally acceptable, I ought to conclude. Yet there are some other points of no small importance towards achieving perfect success, whether as makers of wine or creators of markets.

1. You need internal organization among yourselves. I do not misrepresent you when I say hardly one knows aught about his neighbours' plans of winemaking, quantities or qualities, successes or failures. There is no interchange of thought among the wine people. Yet, if in many industries thought and interchange of experience have been advantageous, surely wine-perfecting can be no exception, involving as it does so many nice critical points. I conceive you want an association, founded on broad grounds of mutual advantage and improvement, and in the kindliest of human feelings, such as the generous beverage is always supposed to engender. Papers should be read, and discussions elicited.

2. You want a recognised organ, and must make wine mat-

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ters fill a larger space in your daily papers. *Bell's Life in Victoria* is now thoroughly committed to the wine interest, and will serve for the present at any rate.

3. You need a central mart in Adelaide. In the absence of any better plan, I will tell you of one which is now in operation and succeeding well in Melbourne. A number of winemakers, mostly on the Victorian side of the Valley of the Murray, formed an Association or Company for the better placing their produce in the Melbourne market. They soon found a cellar capable of holding, say 30,000 gallons. Each stated the number of gallons he was prepared to supply towards filling it, and agreed to pay, whether he had any in it or not, a share of the rent and current expenses in the proportion which the space allotted to him bore to the whole capacity of the cellar. The cellar had a capacity for storing 30,000 gallons. A. B. sent in 10,000 gallons, and had to pay as his share one-third of the rent and expenses. A skilled manager, who could himself watch and treat the wines, was engaged at a salary per month, I think, and then a percentage on all he sold. When I left Melbourne, these wines were moving off steadily. Such an establishment here would, if properly managed, and with advertising and the assistance of the local press, soon become the recognised quarter to which people would look for reliable information, not alone in South Australia, but in all the adjacent colonies. This would be one of the means of placing before the world this fourth largest of your national industries and sources of wealth.

4. Another crying want is a better distillation law; one that will leave you as free as possible among yourselves to convert your wine whenever you like. Probably an export duty would be the simplest and best, as it would leave you at liberty to do as you like at home. As for the shallow cant of free distillation making your people into drunkards, I simply disbelieve it *in toto*. When I lived in Portugal, anywhere in Lisbon, or in the villages a quart bottle of brandy 20 over proof cost at the outside sixpence; yet I never once saw a Portuguese or Spaniard drunk. And are your teetotallers and sentimental philanthropists to tell me the moral

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or physical nature of the Portuguese or the Spaniard is of a better temper and a higher class than that of the native races of Great Britain or Ireland? In Great Britain and Ireland, men who seek stimulants are driven from the beers to malt spirits or rum. They never had a chance of cheap good wine spirit, far less of abundant cheap wholesome wines. The argument, then, from beer and spirits in England to wine and pure brandy here, has not a leg to stand on. If you reason by analogy, make sure that the analogy holds good. I repeat it again, your people at large here have never known what pure good wine spirit was; and it remains for the opponents to show that out of the favoured few who do know what pure wine brandy is, and have had both the chance of getting it and the means of buying it, have become anything like the besotted imbiber of endless nobblers of bad whisky and rum, and worse geneva.

5. I deny that colonial or any other wine has yet become among you an established article of diet in those classes which feel the need and can afford something with their dinner other than a glass of beer. That the wines are more frequently purchased by labouring men than heretofore I grant, but hitherto it is classed among recognised exceptional enjoyments. And this will last until you take the same measures as have lately been taken in the sister colony, or rather until the confectioners, fruit-sellers, oyster-shops, cigar-vendors, and such-like, who come daily in contact with the needs and instincts of the masses, find out that it will pay them to add wine-selling to their other sources of emolument. It seems to me that you should help all such as are willing to enter the wine retailing trade to the best of your ability. Let them have the wine so that they may retail it at the cheapest rate. Our best benefactors were those who began to sell our wines at a shilling a bottle retail. Here it ought to be cheaper still. Your hospitals and public institutions ought to use it. Since I have been among you I have found abundance suitable for these purposes, and immeasurably better in convalescence after child-birth or disease than the wretched compounds called port and sherry, and which cost about four times as much money as the genuine

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article. With a domestic consumption such as it ought be, such as it soon might become if the right sort of people took it up—your gentry of position, your medical advisers in the cause of health, your clergy in the cause of sobriety and morality—you would not only consume your present produce, but might safely enlarge it if no other market were available. But other markets are available, and let us hope soon will be more available as the doctrine of free trade among ourselves as sister colonies becomes generally accepted. Free trade among ourselves would be the blessing of labour and the crown of productiveness. For years to come your wines will be needed in Victoria; needed now for present consumption, and for blending with our thinner and newer wines; needed in our hospitals and public institutions; and lastly, needed as standards of improvement in vine cultivation and winemaking. The higher the standard we keep the public taste used to, the greater the efforts our winegrowers will have to make to gratify it, and the more the wine interest will thrive. Let me say it once for all—if we would have this eastern world seek its wine supply in our markets, we must show that we believe in the produce ourselves. We can make excellent wine in Victoria, but we need, as I just said, your older, higher class, and more perfect wine for a long time to come. I am no politician, yet I may urge for both the wine interests here and in Victoria, that no stone ought to be left unturned to get the benefits of free trade.

On very many occasions in Victoria, and here in South Australia on several since my arrival, I have been asked whether the late Intercolonial Exhibition has had any beneficial effect on our industries and products, either in the improvement of them in quality, or in extending the demand for them. I am asked—"Can you point to any manufacture or native produce that has been in any way bettered by the Exhibition?" Now, I take this opportunity of placing on record what I know of its beneficial effect on the wine industry. It made the name of colonial wine respectable, and that of South Australian really known to the vast mass of our people as an article generally better than aught produced as yet on a large scale among ourselves. The collection of samples,

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and my knowledge of their goodness, enabled me to get together a private meeting of the Medical Society—a body of learned and able men, the membership of which I consider the highest honour conferred upon myself—and induce them seriously to consider the suitability of colonial wine for being exhibited in lieu of port and sherry in our public institutions and their private practice. Out of that meeting has come the adoption of colonial wine in our Benevolent Asylum, and now in our great Hospital in Melbourne, in Geelong Hospital, at Sandhurst, and I think I could mention other places. I calculate on my return that the Lunatic Asylums will also begin to consume them. For now the doctrine seems established, that if wine be indicated, pure wine should be exhibited; where a mere stimulant, then brandy, &c.

Gentlemen, in conclusion, is it wrong for me to hope—ay, to wish—I may live to visit you again at some future time, and have the satisfaction of witnessing, not the pretty vineyards scattered here and there along the plains and the sunny hill sides at long intervals, as now, but the whole expanse of your ranges, fashioned as they have been by Nature to become the home of the vine, one vast, continuous succession of wine-farms. It is no exaggeration to say that the wine-yielding lands of South Australia and Victoria could supply the world if all other countries failed—not alone with quantity, but quality also. With the ripened experience of a few Portuguese Feitores and Spanish Capitazes, added to the wine-knowledge already brought among you by German, Swiss, and French winemakers, your vineyards might equal, perhaps even surpass, the productions of the Old World. For you have what they have not—autumns nearly if not quite always hot, and absolutely dry. No fear of rain, that mortal enemy of wine; but on the contrary, the greatest security that you may let your grapes ripen to the fullest maturity, and gather them and convert them into musts at your most ample leisure. With these advantages, the fault is your own if your wines are inferior to the produce of any warm climate on the hitherto known surface of the globe.

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